
IMAGES OF PUBLIC HOUSING: A Design
Exploration Addressing the Intrinsic
Relationship between Individuals
and the Living Environment

By Joann Stephanie Staton
B.S. Civil Engineering
Howard University
Washington, D.C.
May 1980

Submitted to the Department of
Architecture in partial fulfillment
of the requirements for the
Degree of Master of Architecture at the
Massachusetts Institute of Technology
June, 1984

© Joann S. Staton 1984

The author hereby grants to M.I.T.
permission to reproduce and to
distribute copies of this thesis
document in whole or in part.

Signature of author

Department of Architecture
February 6, 1984

Certified by

M. David Lee, Assistant Professor
Architecture and Urban Planning
Thesis Supervisor

Accepted by

Chester Sprague, Chairman
Department Committee for
Graduate Students

Images of Public Housing: A Design Exploration
Addressing the Intrinsic Relationship Between
Individual and the Living Environment

by
Joann Stephanie Staton

Submitted to the Department of Architecture on January 27, 1984 in partial fulfillment
of the requirements for the Degree of Master of Architecture

ABSTRACT

The architecture of public housing is generally lacking. It reflects a deteriorated national image of low-income housing and holds far-reaching consequences for the poor who have their own image of public housing. This thesis is an architectural investigation, and because it deals with images--what people see and feel-- the sociological influences are strong as well.

The concern of this thesis is creating positive images of public housing from both the residents' and the public's perspectives. To do so, it points out specific architectural devices which promote an improved image and better quality homes.

The relationship between the individual and the living environment is critical to the process which yields the final design. An examination of the meaning of the house defines the parameters of this relationship as it initiates a user-oriented design theme. The result demonstrates that a process deeply rooted this way and based on step-by-step design decisions, ultimately satisfies user needs without soliciting the usual stigma public housing carries.

Thesis Supervisor: M. David Lee
Title: Assistant Professor of Architecture and Urban Planning

FOREWORD

American cities are generally attractive and wholesome places to live. Cohesive neighborhoods and lively public places characterize our urban environments. Unfortunately though, there is a dark side to everything, and public housing can usually be found in these shadows.

Modern society has the technological and economic capacity to provide pleasant living environments for everyone. This thesis satisfies my urge to demonstrate this point through architecture. Illustrating the importance of the built environment to the human spirit, frees our creative abilities to provide wholesome living environments for the poor as well as the rich.

ACKNOWLEDGEMENTS

To the people I owe my deepest
gratitude:

I've spent many hours in the last
waking nights, thinking
About the efforts that produced this
thesis, the friendships that paved
these last few years,

And the encouragement that guides
my life.

But, still, it is difficult to
describe the depth of my gratitude.

I am indebted to you all for so
many reasons.

To Gail Epp, thank you for introducing
me to Mission Hill and sharing with me
your expertise. I will remember
your generosity.

To Jan Wampler, thank you for
constructive criticism, your advice and
patience throughout a busy semester.

To David Lee, thank you for so many

chunks of quality time; I learned many
new things under your guidance. I
am grateful for your concern, and your
reassuring sense of humor which
helped me to "press on" through
frustrating times.

To John Washington and Lauren Seymour,
my dearest friends, it would have
been miserable without you. Thanks
Ricky Marshall for the crash course
in photography and for taking many of
photos for this project.

To Frank Tollett, my closest friend,
thank you for supplying the optimism
and kindness that brightens my cloudy days.

To my family, your endless faith
has sustained me throughout the years.

Thank you for everything Mom and
Dad....I love you!

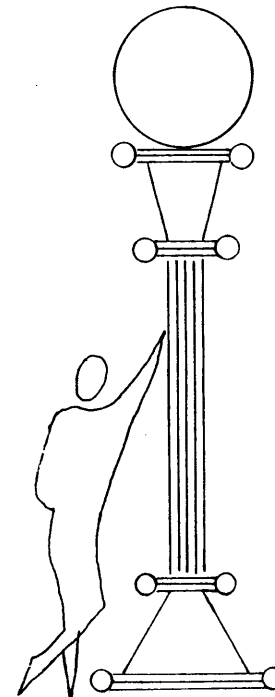
CONTENTS

ABSTRACT.....	2
FOREWORD.....	3
ACKNOWLEDGEMENTS.....	4
CHAPTER 1 INTRODUCTION	
The Problem with Public Housing...	8
The Thesis.....	14
The Site.....	15
CHAPTER 2 NEIGHBORHOOD ANALYSIS.....	22
Residential Development.....	23
Institutional Expansion.....	23
Character of Neighborhood.....	23
Clues for Mission Hill Extension..	30
CHAPTER 3 SITE ANALYSIS	
Adjacent Land Use.....	35
Built Condition of Site.....	39
Pro's and Con's of the Location...	41
Microclimate.....	42
CHAPTER 4 PROGRAM & PRINCIPLES	
Program.....	48
Principles.....	50
Programmatic Translation to the Site.....	57
CHAPTER 5 SITE DEVELOPMENT	
Derivation of the Site Plan.....	65
The Product.....	78

CHAPTER 6 BUILDING DESIGN	
Building Plans.....	97
The Townhouses.....	105
The Hi-Rises.....	123
CHAPTER 7 CONCLUSION	
Summary of Findings.....	130
Social Problems.....	131
APPENDIX.....	135
WORKS CITED.....	138
SOURCES CONSULTED.....	141

CHAPTER 1

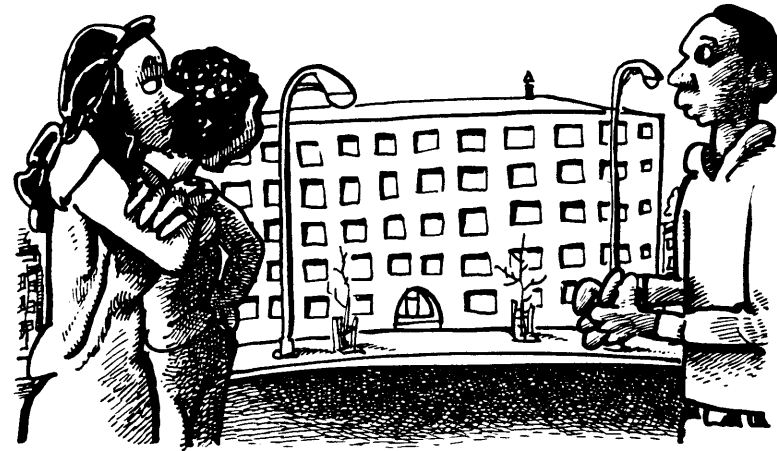
INTRODUCTION



THE PROBLEM WITH PUBLIC HOUSING

In recent decades, the subject of public housing has received considerable and well-warranted attention. Numerous documents are bringing the public to a new understanding of public housing, but political and social discord continue to aggravate the problems. "Housing involves some difficult social problems centered around poverty, race, education, unemployment, transportation, and crime.¹ In the tide of these burdensome circumstances, architects among others are now realizing a heightened awareness of their roles in the struggles of this system.

Architectural design is generally lacking in present public projects. The designs of the past had arrived at new frontiers of blandness, and by



Lack of amenities. Source: The Empty Promise.

gentlemen's agreement, retained this institutional signature as the precedent for projects around the nation.²

Identical structures were stamped onto the site, foreclosing rational spatial sequences and any hopes to impart individuality or dignity to the units. These buildings were not built cheaply; the frills had just been forbidden.³ Construction costs for low income housing rivaled the costs for luxury hi-rises. Still, costs and financing were given as the rationale for the grossness in public housing. Local housing authorities were losing money and pointing to high operating expenses along with limited income from rents and ineffective management strategies.

Crime is a problem. It is often believed to reflect the destitution of surrounding neighborhoods. Criminals are outsiders; the residents are particularly vulnerable and often



Somerville Projects showing poorly organized landscape for early housing developments.

their prey.⁴

The blighted scenario of public housing is complex but far from invincible. Moreover, the self-perpetuating cycle of high costs -- low maintenance -- high crime -- and increasing vacancies is indicative of a missing link in the housing process. This link has to do with the relationship between the individual and the living environment.

The residential structures of traditional Samoa perhaps represent the house in its simplest form. Furthermore, they provide an example of the relationship between the individual and the living environment. The Samoan houses consisted of a thatched roof supported by several heavy posts at the center and along the perimeter of their circular or elliptical plans. Joints were secured by decorative sennit lashings and protection from moisture provided by a raised platform of pebbles from the

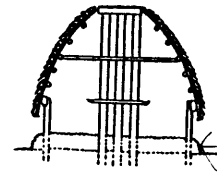
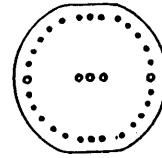


Deteriorating housing stock. Source:
The Empty Promise.

beach. Still, in a simple way, the Samoan house addressed issues of rank and status through the height of the pebble platform and territorial claim and human expression through the attractiveness of an adjacent garden.

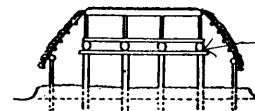
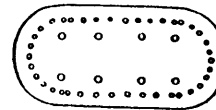
What is most important about this example is the role/relationship the people had with the dwelling. As much as the details of construction signaled the status of the owner, the function of the building alone was obscure to outsiders. Instead the building was dependent on the use the owner had for it at any particular setting. This interdependent relationship between the user and the dwelling makes clear that people often look to built forms to reaffirm their position in society and to reinforce their self images.

Today's planners and housing officials are finding out that previous housing programs lacked room for the relationship between the indivi-



The Samoan Round House
Plan and Section

Pebble Platform



The Samoan Long House
Plan and Section

Decorative sennit
lashings for
joints

Fine Details address human concerns in
simple designs.



BROOKLINE VILLAGE- Examples of how private territories are established for high density housing complexes. Left, fenced yard for ground floor apartment. Right, backyards for townhouse units.

dual and the dwelling. They lacked room for creative personal expression, individual definition, control over key decisions, and opportunities for territorial claim --just a few prerequisites for satisfactory housing.

Of all decision-makers, architects make the key impressions on the housing product. These impressions -- the image --are seen from two perspectives, the public's view and the tenant's view. Moreover, negative images held by one group induce negative images for the other and vice versa. In the past, the image of public housing was negative for both groups. Deteriorating projects coupled with the social characteristics of the residents tarnished the public image and fueled a trust for uniformity and durability. In turn, blandness and the absence of definition left residents with an equally poor image and little desire to



An extreme example of personal expression for a house on Mission Hill.

identify with or maintain the property.

THE THESIS

The image of public housing can and should be positive. Definite architectural moves are available to improve the quality and image of public housing. The purpose of this thesis is to explore the devices that would improve images and provide the amenities that tenants value. This thesis will emphasize the relationship between the individual and the living environment and demonstrate that the same design principles for private housing can be used as precedents for the new image ascribed to public housing.

This thesis will implement and explore through design such concepts as territoriality and defensibility, both laboriously investigated by Oscar Newman in Defensible Space. Similarly, the surveys and findings of



Buffer zone created by strip of trees helps to define the territory belonging to the houses behind it.

countless other authors will provide additional reference for the principles and definitions to be established. The vehicle for establishing this thesis will be the design of a public housing development at the Mission Hill Extension site in Roxbury.

THE SITE

Mission Hill Extension consists of five seven story hi-rise buildings, six three story walk-ups, a gym, and a central heating plant. At present, three of the five seven story hi-rise buildings are slotted for demolition, while the remaining two will be completely gutted and renovated. Sixty two new townhouses will be constructed to occupy the cleared space. The renovations of the hi-rise buildings include duplex apartments on the lower two floors and smaller one and two bedroom units on the upper



View 4- Early morning view of Mission Hill Extension.

floors. The Southwest border of the site along Columbus Avenue is attached to the Southwest Corridor Improvement plan.

This particular site offers an interesting combination of new construction and rehabilitation issues. The issues are diverse and require a great deal of attention to achieve the balance necessary for a coherent solution. The problems surrounding hi-rise rehabilitation alone would fill a thesis. Since the new construction allows greater freedom to exercise new ideas, the design will be centered around the sixty two new townhouses. The hi-rises will be addressed only in terms of site planning and facade design.

In this thesis, image can simply refer to the thought that comes to a person's mind when someone says "home". What does the person envision? This interpretation of image includes more than just the looks of

the building exteriors and the streets and playgrounds. It includes structural quality, light, and views.

However, to seriously propose influencing the quality of life for people to the point of offering some positive psychological message, designers must understand not just from whose point of view an image is perceived but also what are the specific qualities of built form that provide the most efficient clues. This thesis will be limited to the discussion and manipulation of public housing's architecture. It is an examination of the potential sensitivity of an architectural solution to the housing needs of people. Therefore, the elements of building organization and design that affect image will be identified first, and it will be determined which moves are affordable and which provide the most benefits. Each aspect of design will be analyzed in terms of the qualities

that affect the public's view and those that affect the resident's view. An emphasis will be placed on the effective manipulation of these qualities.

The issues involve a range of tangible and intangible concepts. Materials, the physical organization of spaces and buildings, the general attractiveness of buildings and the nature and distribution of outdoor activities are all factors that are specifically relevant to the public view. The same issues affect the resident's view, but a few other issues concern the residents namely, the nature and adequacy of spatial allotments --territories and boundaries, the degree to which needed facilities are provided --recreation, day care, and the quality of space -- climate control, soundproofing. Small scale, variety, and personalization are desirable traits, but some determination must be made as to how

much is economically feasible.

The ground rules are laid with an analysis of the neighborhood and site. Based on these ground rules, a set of guiding principles will be established that state the needs and wants of the users. The design phase includes its own set of evaluative criteria. These criteria are based in part on the architectural qualities given to private housing and other traditional residential organizations since these are acceptable and cost effective forms and represent the values to which poor people often aspire. Much emphasis will be placed on maximizing space, quality construction and compositions using these traditional materials and techniques.

Due to the complex circumstances surrounding public housing, a purely architectural solution would be inefficacious. Several other relevant issues must be understood as part of the global solution. As part of the

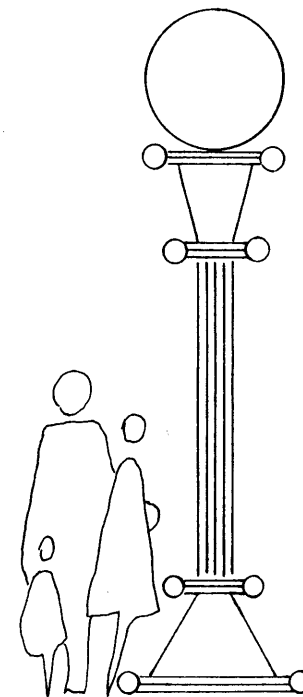
conclusion, a brief commentary talks to the social problems surrounding public housing and what effects they have on the lives of the tenants.

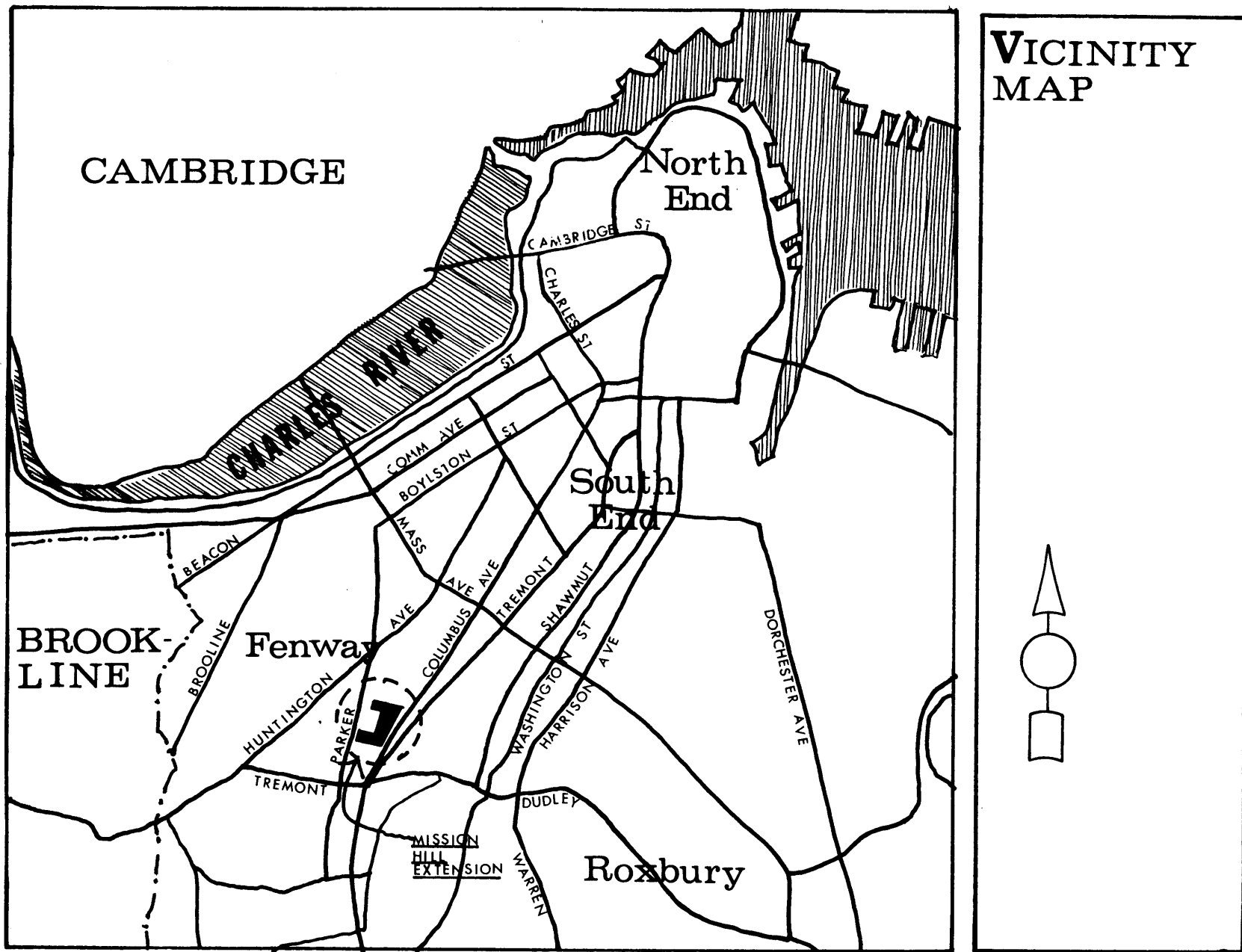
Notes

1. Robert Liston, The Ugly Palaces (New York, 1974), p.7.
2. Oscar Newman, Defensible Space (New York, 1973), p.108.
3. Newman, p.105.
4. Liston, p.72.
5. This example is taken from a paper written by the author, "The Samoan Residential Landscape," a study of cultural influences on architecture. (Partial requirements for the course 4.696, Massachusetts Institute of Technology, December 17, 1982.)

CHAPTER 2

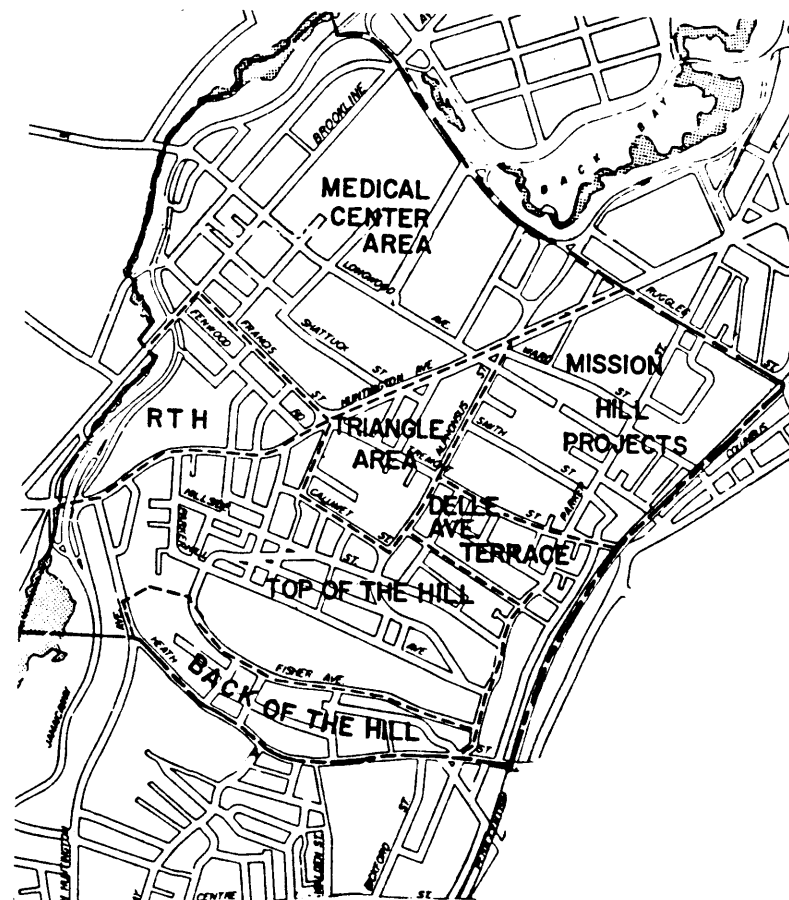
NEIGHBORHOOD ANALYSIS





RESIDENTIAL DEVELOPMENT

The early residents of Mission Hill were prosperous settlers attracted to the Hill by the unique view it offered of Boston and what was then a rolling countryside. Working class families soon populated the undeveloped suburb of Boston when city services were extended into Mission Hill in the late 1860's. The area grew to become a closely-knit, Irish Catholic community built around the Mission Church which offered guidance and fostered cohesiveness throughout the community.¹ Much of that cohesiveness stemmed from the homogeneous character of the population and was later challenged by changes in the social make-up of the area.



The sub-areas of Mission Hill. Source: Mission Hill/Medical Center Area, District Profile and Proposed 1978-1980 Neighborhood Improvement Program.

Throughout the 1950's, the church was the center of the Mission Hill community. In 1940, the Mission Hill housing projects were erected and quickly taken into the guiding arms of the church. In 1952, an extension was added but remained apart from the auspices of the church.

Residential development has been concentrated in three major areas: (1)Public housing projects at Mission Hill Main and Extension, (2)The Whitney Redevelopment Projects: Charles Bank Apartments, Back Bay Manor, and (3)Mission Park.

INSTITUTIONAL EXPANSION

The New England Baptist Hospital along with the Robert Breck Brigham Hospital were the progenitors of an intense community of medical facilities and were among the first to establish the strong institutional presence now felt on the Hill.

The installation of new medical centers and the expansion of universities persisted, and as a result, families were displaced or bought out --sometimes for an actualized project and sometimes not. With the growing institutional influences came a new population. Not only had the races integrated upon the construction of the new housing projects, but students and professionals were starting to compete for the diminishing housing stock. These instances of institutional encroachment were blamed for the upheaval of the community of old.²

THE PHYSICAL QUALITIES OF THE NEIGHBORHOOD

The latter part of the 1800's produced a large number of low cost frame houses. These were two and three family, triple deckers built along the slopes of rural estates that



Townhouses
on Fort Hill.



...projections



➔ Catalogue
of Materials,
Styles, and
Architectural
Elements ➔



Apartments
in Mission Hill.



...large windows....

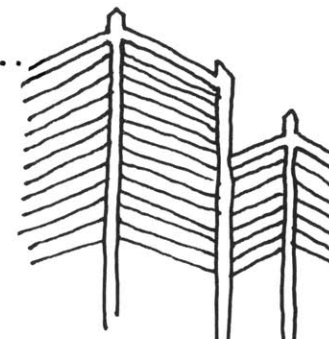


arched & square
entryways...
enclosed and
elevated

clapboard facades...



brick facades...



were once Mission Hill. Housing in Mission Hill today is characterized by these triple deckers. Only a small percentage of the housing stock is made up of single family homes. Several masonry multi-family dwellings were built along Huntington Avenue but were still few in number compared to the wood frame structures in the neighborhood. The recent decades have brought extensive institutional growth and negligible residential development.³

With distinctly different three and seven story buildings, the Mission Hill projects became a separate sub-area. These public housing units represent over three-fourths of the units in the immediate vicinity.⁴

The housing concept installed with the construction of Mission Park illuminates a future direction for housing in Mission Hill. This development is a publicly subsidized, mixed income neighborhood of 775 units. It



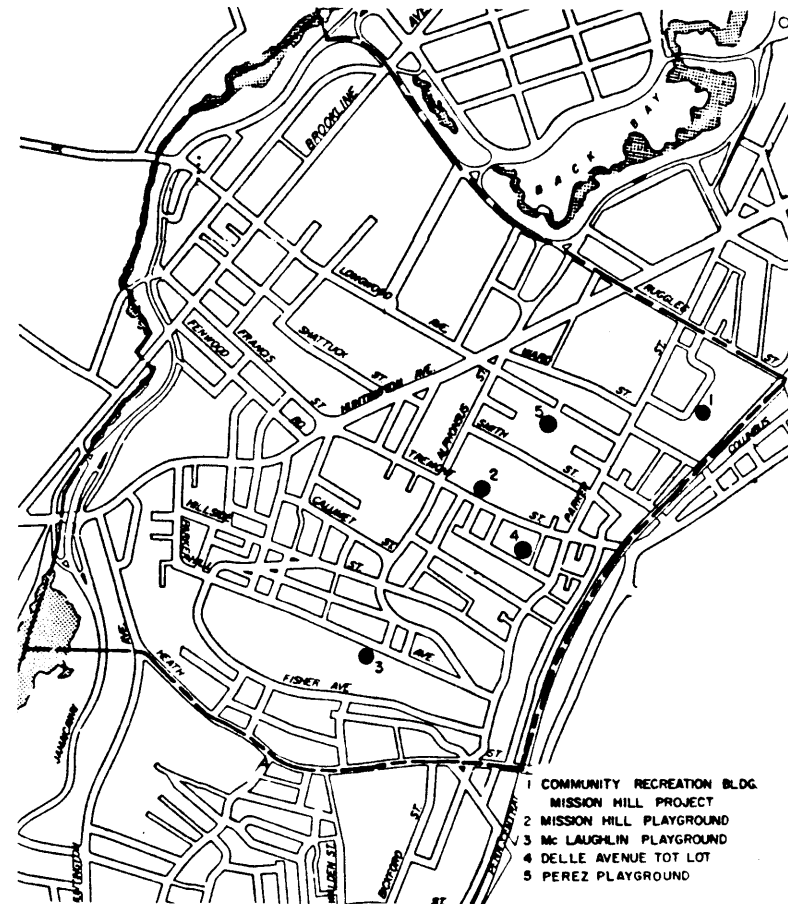
MISSION PARK- Above, One of the three towers at Mission Park. The townhouse units at Mission Park are shown below.



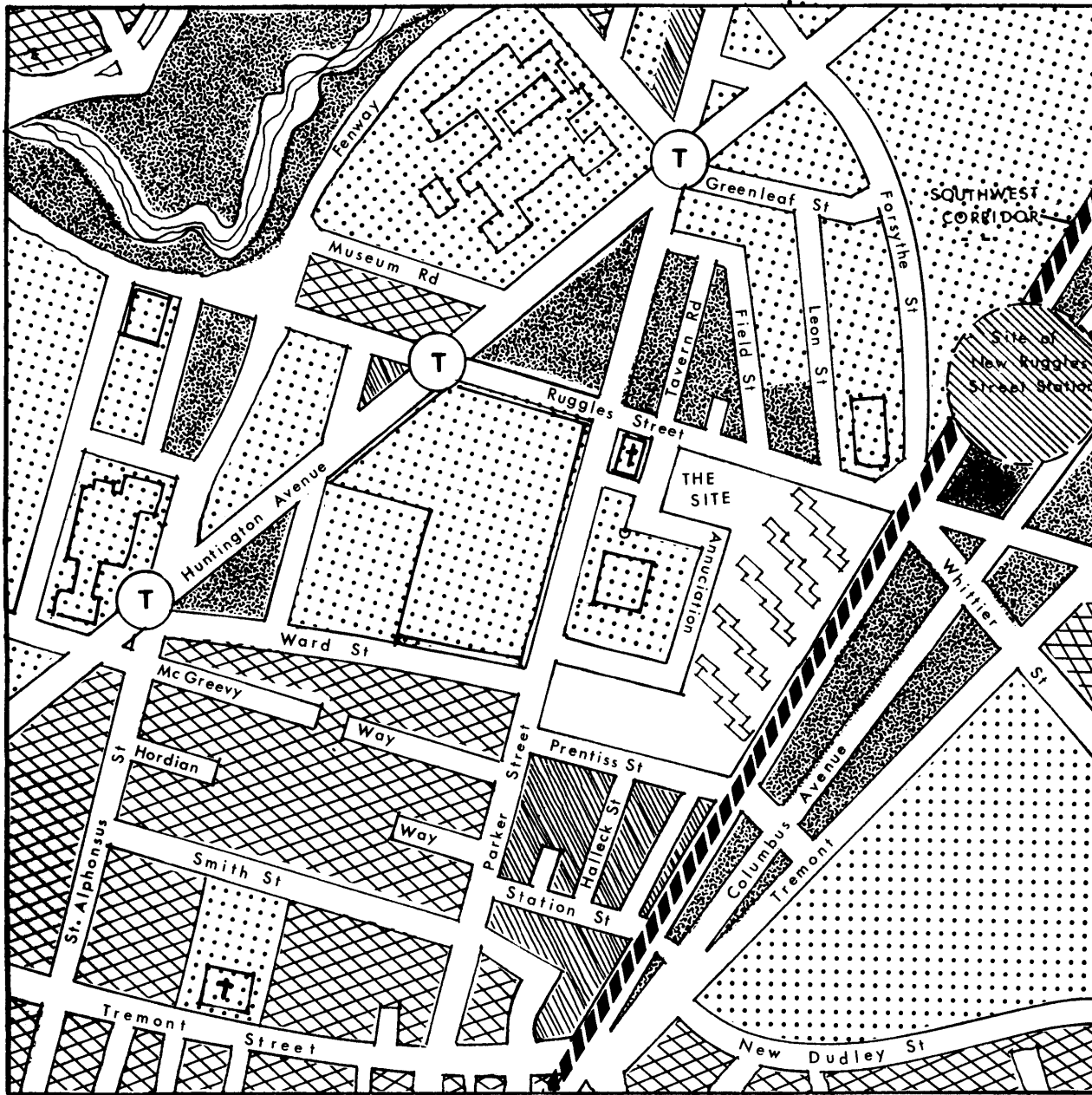
includes recreation, day care, and health care facilities. The residences consist of two to three story, wood frame, townhouse-type structures and hi-rise buildings. Other hi-rises dot the neighborhoods but were vehemently opposed by the residents since so many families were evicted to make way for the structures.

Five playgrounds are operated with public funds. Two are located at the Mission Hill Main Extension sites. When not utilizing the playgrounds, youths play on the sidewalks or on school grounds. At Mission Hill Main and Extension, where there is the greatest concentration of children and teenagers, youths congregate at building entrances.

Corner stores and small neighborhood shopping areas are plentiful, but the main neighborhood shopping area is the Brigham Circle business district. Brigham Circle is a convenience to many Mission Hill residents, but is







Public Playgrounds, 1968-1977, Source:
Mission Hill/Medical Center Area, District
Profile and Proposed 1978-1980 Neidhghborhood
Improvement Program

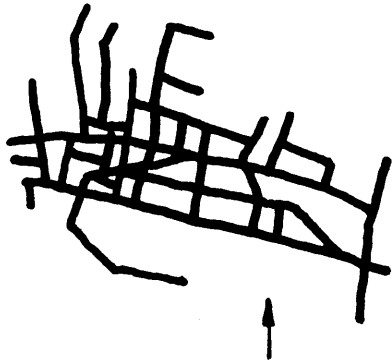


LAND USE MAP

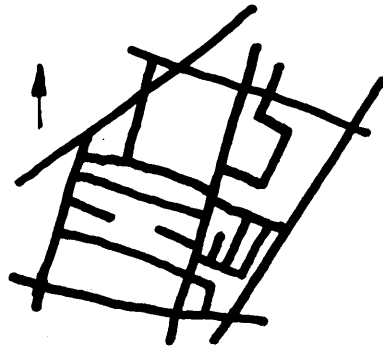
key:

-  INSTITUTIONAL
-  RESIDENTIAL
-  PARK or OPEN SPACE
-  COMMERCIAL

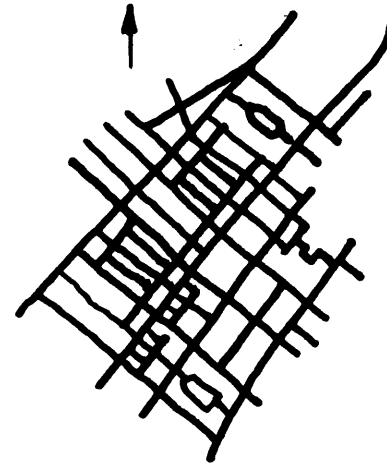




Mission Hill Residential-
Loose, suburban-type
organization.



Mission Hill Projects-
Large, industrial-size blocks
with no particular organization.



South End Residential-
Tightly-knit, orthogonal arrange-
ment of streets forming distinct
blocks.

COMPARISON OF STREET PATTERNS
FOUND IN
BOSTON NEIGHBORHOODS

losing it's clientele and money to larger outlying shopping centers and consequently offering diminishing service and quality.⁵

Hospitals, universities, and numerous industrial buildings account for the balance of the structures in Mission Hill. The institutions had developed a pattern of acquiring houses, making no significant investments in the buildings, and demolishing them once they were vacated. This practice left numerous patches of vacant land among residential communities.⁶ Now, any redevelopment of this land leads to major consequences for the character of Mission Hill.

THE RESIDENTS OF MISSION HILL

The population characteristics of Mission Hill have shifted drastically in thirty years, from predominantly Irish Catholic families to a populace which is still predominantly White,

but significantly Black and Hispanic. At the time of the 1970 census, over half the area's families were below poverty level and living in the Mission Hill Projects. This group represented 70% of the Black population and 52% of the Hispanic population.⁷ Hence, most of the non-white families were concentrated in these projects. These new social and racial characteristics were major thrusts encouraging the old middle class to move out. New residents and the institutional entourage were slow to assert their presence for the same reasons.

Today's neighborhood is progressive and dynamic. A new-found cohesiveness is germinating in the heterogeneity of the community. The Mission United Neighborhood Improvement Team(MUNIT) has banded to insure the regulation of institutional expansion.⁸ Other neighborhood groups are tackling the problems of poor police

protection, poor lighting, and problems involving the lack of home delivery and repair services by private companies. The central issue now is preserving what is left of the neighborhood and making something decent and good.⁹

CLUES FOR MISSION HILL EXTENSION

As the instances of small groups organizing to protect their neighborhoods increase, it is clear that any new development will need to summon these same feelings of community to succeed as a place to live or just to survive as a built entity. Moreover, as a major residential development, Mission Hill Extension can and should be a major contributor to the neighborhood forces that are rising.

Images are important simply because people have to see their environment as a neighborhood before they can respond with group efforts.



1898 View of Huntington Avenue showing the original, wood-framed triple deckers of Mission Hill. Source: Boston 200 Corporation, Mission Hill.

Once this happens, regaining the image of an assertive and respectable community is facilitated, and problems are more quickly resolved or repelled. Where Mission Hill Extension is concerned, much of the emphasis in designing can be to reconstruct a neighborhood pattern to provide the qualities that help engender feelings of community.

In summary, three qualities observed of the old community which might somehow be incorporated into the plan for the new development include the following.

A Focusing Element

This was a church in the case of the old neighborhood. It is a place where people meet and identify as an appropriate place to congregate.

A Choice Place to Live

The early residents came to Mission Hill because the area afforded certain physical amenities. Their relocation was favorable first because

it was their decision and second because they found a community they could care about there.

A Population with Common Goals

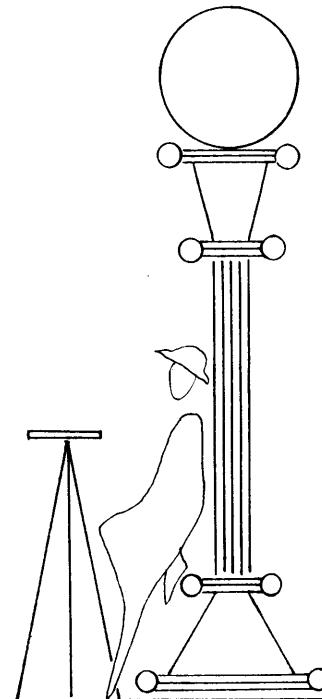
A homogeneous neighborhood created an atmosphere for community ties, but once integrated, these ties were left vulnerable. Today's residents have found a new sense of community in the goal to keep the neighborhood alive and good.

Notes

1. Boston 200 Corporation, Mission Hill (Boston, 1976), pp.1-2.
2. Boston 200, p.8.
3. Boston Redevelopment Authority, Neighborhood Planning Program, Mission Hill/Medical Center Area, District Profile and Proposed 1978-1980 Neighborhood Improvement Program (Boston, 1977), p.1.
4. B.R.A., p.4.
5. B.R.A., p.16.
6. B.R.A., p.13.
7. B.R.A., p.2.
8. Boston 200, p.8.
9. Boston 200, p.24.

CHAPTER 3

SITE ANALYSIS



People interact with the environment to form communities. The action that occurs is supported in turn by the organization of the environment.¹ Ultimately, the site plan affects how people act toward one another and other things. For this reason, the following description of site responses is also oriented to human purpose and the physical setting.

Typical urban sites must respond to: existing building patterns -- massing and footprints; adjacent land usage --commercial, residential, industrial; and existing use patterns --circulation and zoning. The Mission Hill Extension site must account for similar issues, but specifically, it must respond to: (a) Adjacent land use (b) The built condition of the site (c) The microclimate at the location.



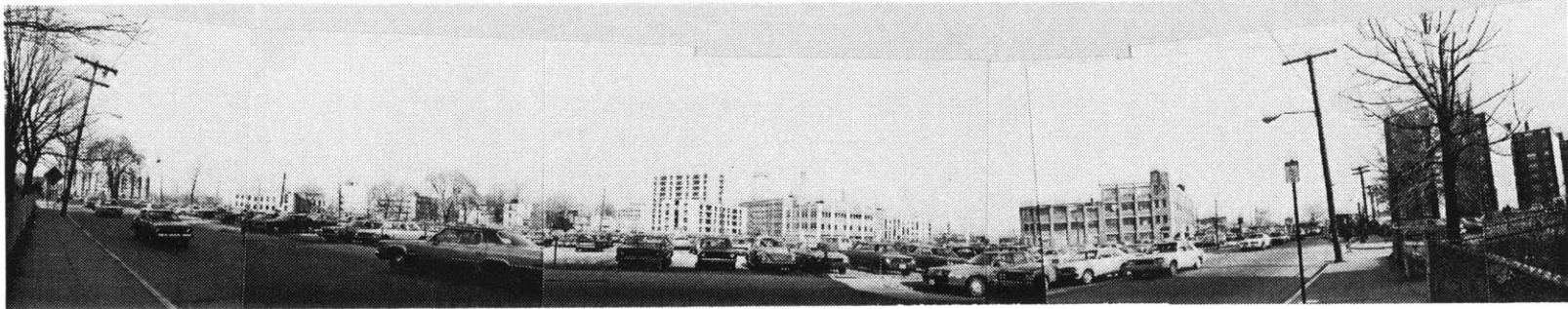
View 2- Building One. The gym is in the bottom right corner

ADJACENT LAND USE

The Mission Hill Extension is located in the northwest portion of Roxbury, a section of the city undergoing extensive urban renewal. As a whole, the site is located with the Southwest Corridor on one edge, a boys trade school, Wentworth Institute and Northeastern University along two edges and Mission Hill Main and some light industry along the other edge. The northwestern border of the site overlooks an expansive parking lot belonging to Northeastern University but culminates in a view of the Museum of Fine Arts. The Afro-American Master Artists in Residence Program(AAMARP) building flanks the north edge too. The back of the trade school offers an unpleasant view to the northeast partly because of the six foot high chain-link fence that



View 1- Entrance for a three story walk-up



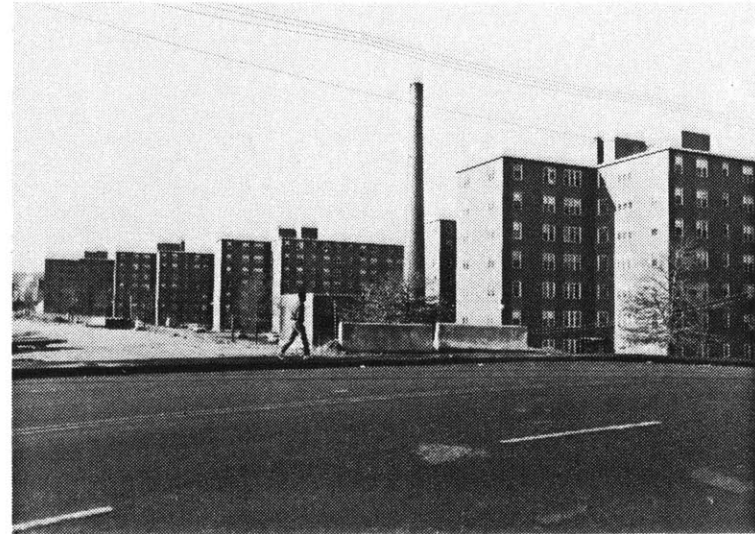
View 6- A panoramic view to the east of the site
from the AAMARP building to the Museum of Fine Arts.



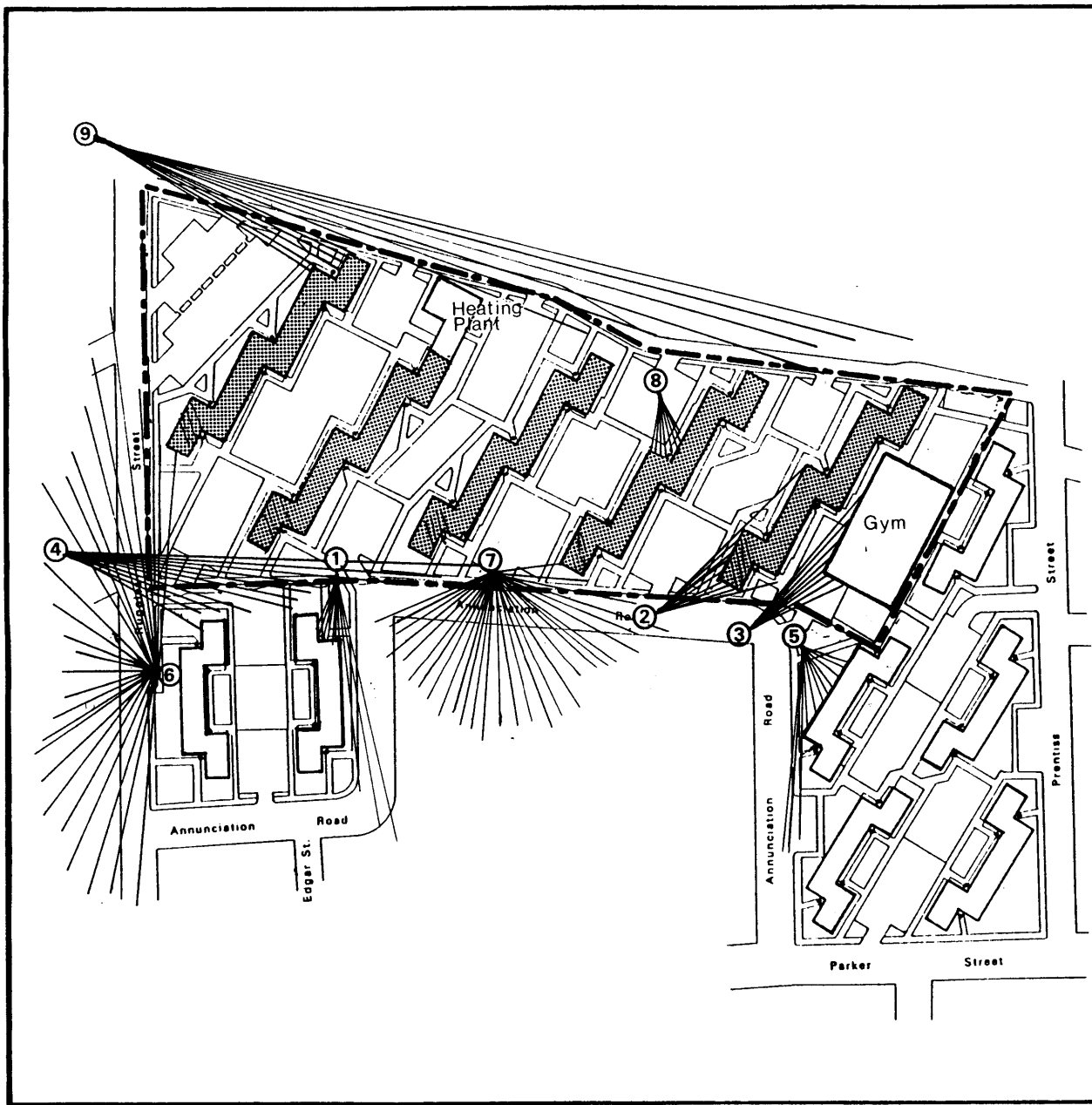
View 7- View of the Boys' Trade School.

borders it.

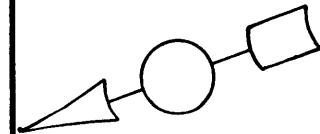
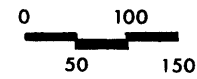
The construction boundaries can be seen on the site map. By completion of the scheduled construction for this project, the site will be interposed between Green line Transit stops to the north and a new Orange line Station to the immediate east. This positioning promises an increase in both pedestrian and vehicular traffic along the already busy Ruggles Street. This street is the main entrance to the site, hence it is extremely important in this discussion of images since it will be the public's first impression of the newly developed housing. The railway edge will make a similar though less profound impression on passersby using the newly planned landscaped deck over the Orange line. This new feature will provide for much of the recreational needs of the residents of Mission Hill Main and Mission Hill Extension as well as the needs of the



View 9- Rear view of site from across Ruggles Street near site of new Orange Line station.



SITE BOUNDS & VIEWS



surrounding educational institutions.

The remaining portion of the site consists of three story walk-ups. These buildings are not part of the remodeling and are well occupied.

BUILT CONDITION OF THE SITE

Five seven (7) story buildings presently occupy the site. Two are vacant and boarded and the remaining three only partially occupied. The first floors of the buildings are unoccupied. Each building has six barely distinguishable entries except for the obtrusive bright orange color of the doors. All entrances show signs of vandalism in the form of graffiti bearing messages of a nature that could have been intended to protect the building from intruders. These entry points serve as hangouts for children and teenagers. The four intermediary zones formed by the buildings are obviously intended for



View 8- Vandalized entrance

use by young children but are void of safe playing equipment and over-grown with weeds. Cars are parked at the outer edges of these zones.

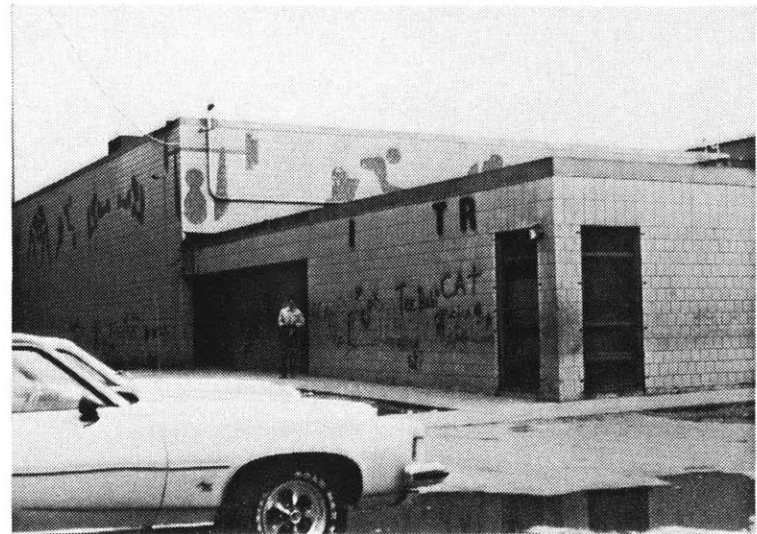
Windows serve a variety of uses. They have become places to air rugs and dry clothes. They are a means to cool off over-heated units. They are also occasionally used to store small items. (One resident had secured a milk crate outside the kitchen window.)

The only cultivated vegetation sits above two entrances for the middle hi-rise. These are inaccessible but somehow well-kept flowers growing in plant boxes.

The recreation building is a single story concrete block structure that houses a gym and a day care center. This is a frequented building for both it's intended uses, but it is sandwiched between the eastern-most abandoned hi-rise and one of the three story buildings. In this position, it

is only recognized by the graphic images of basketball players on it's walls. It too has received it's share of graffiti.

Access into the interior of the site is obscure and complicated with a series of 90° turns that lead to a dead end. This situation has forced a predominantly pedestrian northern edge characterized by views of run down buildings. Along this path, on Annunciation Road and between the gym



View 3- The Gymnasium.

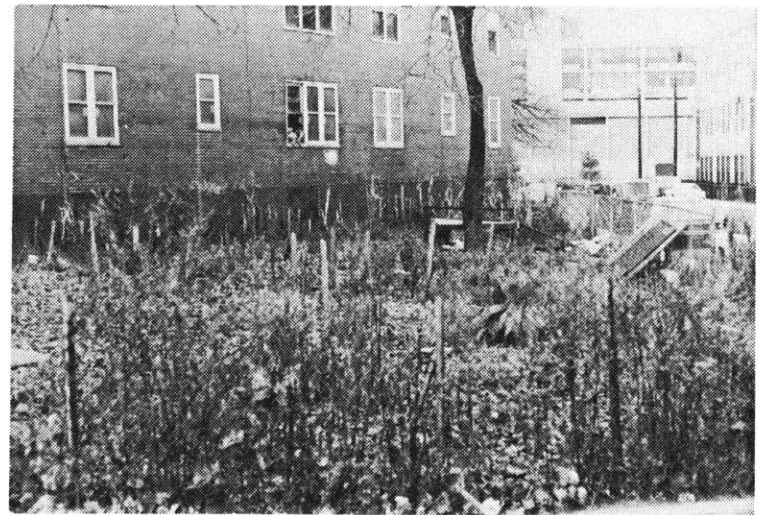
and one of the three story buildings is a patch of land that has been turned into a communal vegetable garden; in November, the remnants of a recent harvest were still apparent.

PROS AND CONS OF THE LOCATION

While the site bears testimony against inappropriate planning, the adjacent land gives way to equally compromised circumstances. As mentioned earlier, the southern edge of the site is bound by the landscaped deck of the Orange Line. Unfortunately, this deck is elevated and limits the only escaping views to the south to third story residents and those above. In spite of it's intended use as a source of recreation, it serves as a physical and visual barrier to the residents of Mission Hill Extension and offers more negative images to an already critical situation.

The site's location across from a vast, rugged-looking parking lot and the back of a trade school reinforces the image of public housing as the worst part of the city and adds to the institutional appearance of the site.

The amenable circumstances surrounding the site are limited to views to two important museums in Boston and it's proximity to a major mass transit station.

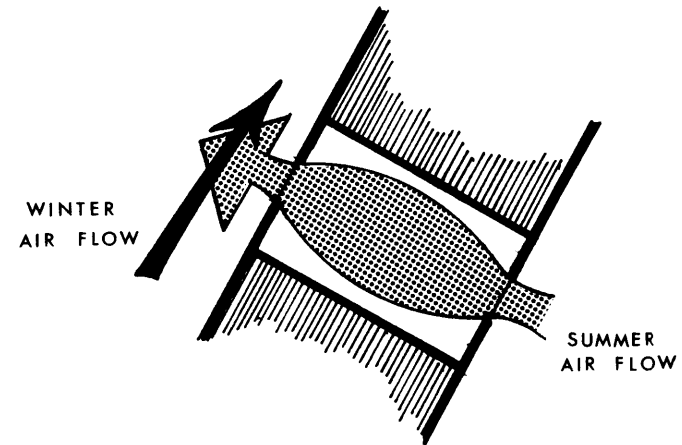
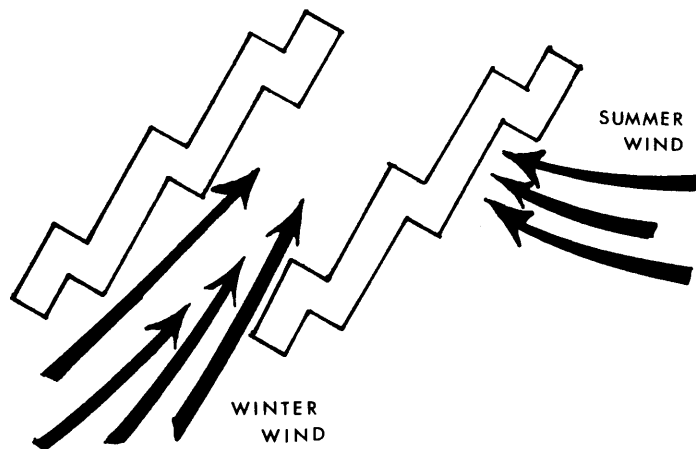


View 5- The vegetable garden.

MICROCLIMATE

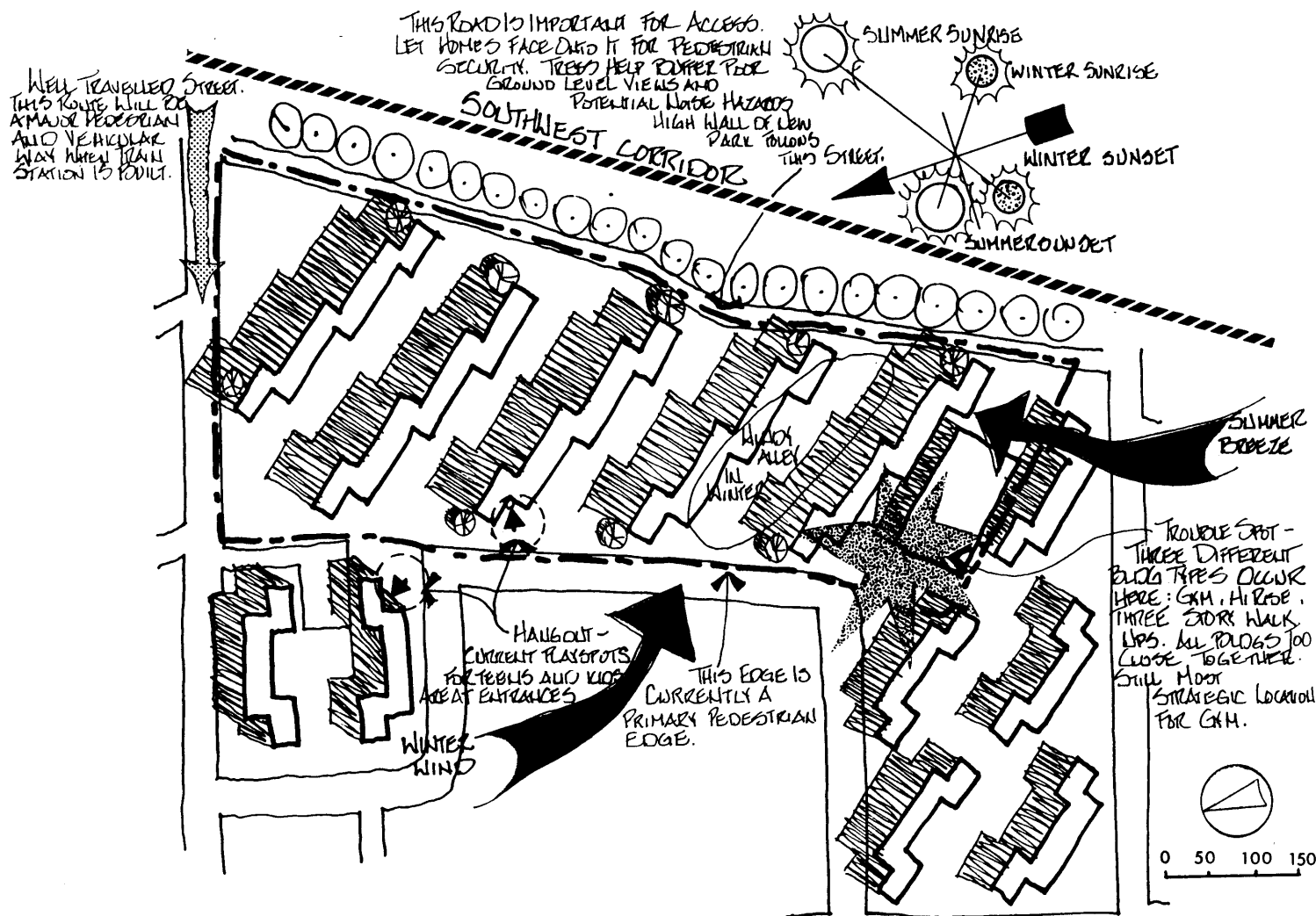
Wind

At the tower scale, the wind is critical. During the winter, wind effects should be minimized and during the summer, maximized. The hi-rises on this site are oriented 46° east of south.¹ In the New England area, winter winds come from the Northwest and summer winds come from the southwest.² At their present orientation, the hi-rises can act as wind channels during the winter and wind blocks during the summer.



during the summer, but for the units themselves this could be the optimum orientation. Winter winds hit the short side of the building and cause lesser heat losses than they would if they hit the longer sides of the buildings. Summer breezes through the individual units are also maximized this way.

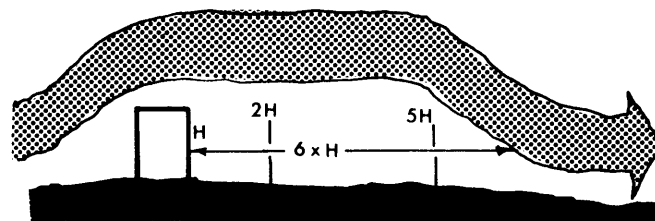
The coexistence of tall and low structures presents another problem



Microclimate & Site Analysis

with wind. In many cases, the tall structure can act a wind barrier for the lower structures. However, where the tall structure is a solid barrier such as a seven story building, large windward over pressures and leeward partial vacuums are created. The vacuum draws air around the top and sides of the buildings and cause turbulent conditions. To alleviate the effects on lower objects, the low structure can be located far enough behind the wind break to a point where wind velocities have been slowed but have not had sufficient distance to regain original speed. This would be the point of maximum protection, and is located any where from two to five times the height of the wind break.³

On the windward side, the tower still poses a problem for nearby structures and pedestrians. A tower more that 50% taller than it's neighbors will cause high ground wind velocities --called a reverse wind



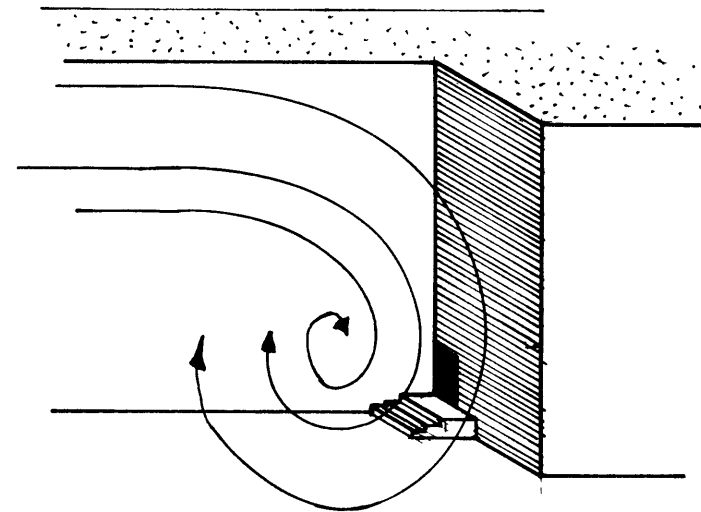
Wind conditions on the leeward side of a tall wind break. The protected zone is within two to five times the height of the wind break. The hi-rises are oriented along the direction of strong winter winds, so the effect of a windbreaker is important for activities that occur between the hi-rises.

vortex. Although buildings and vegetation of relatively uniform heights alleviate pedestrian level wind speeds, little can be done to stop the turbulent wind effects of tall buildings.⁴

Sun

A large south facing perimeter is a quality of this site although its configuration and the direction established by the hi-rises preclude the advantages of directly south facing structures. Although this precedent does allow opportunities for man-made sun traps for playing and sitting. Large walls (greater than 10'x8') can moderate outdoor temperatures, extending the spring and fall seasons and carry daytime radiation into the night.⁵

The railway edge and the Prentiss Street edge represent the south facing perimeter. Ruggles Street gets direct



The reverse wind vortex.

sun on summer mornings and Annuciation Road gets direct sun in the evenings. The site is flat, therefore the only objects in the sun path are the trees and the buildings themselves. The shadows created by the hi-rises are important. The shady side of the hi-rises are those closest to Ruggles Street though all sides receive sun during some part of the year. This may be one way to justify the skewed orientation of these buildings.

Vegetation

Only a handful of trees sprinkle the site. At least two trees flank the two ends of each hi-rise building. The open space between the buildings is the only other unpaved opportunity for plant growth, and again, these spaces are overgrown with weeds.

Vegetation can help modify air temperatures by reducing wind velocities, producing shade, and cooling through the transpiration of water on leaves. Grass can act as an insulator for soil and a good insulator for soil and a good reflector of solar energy. Mature trees can be used to shield new seedlings from high wind and water runoff velocities. Ideally, the trees that do exist can be planted in conjunction with seedlings and evergreens for beautification but also to form permeable wind breaks. Unlike solid wind breaks, permeable barriers relieve the windward and leeward

pressure differences and generate a larger protected zone. Such barriers would be planted densely from the ground up to keep wind from slipping through the canopies.⁶

Notes

1. The method used to locate south is described by Timothy E. Johnson in Solar Architecture (Cambridge, 1982), Chapter Three. It involved hanging a weight on a piece of string from a pole driven into level ground. At solar noon, the direction of the shadow is the true north-south orientation.

2. Timothy E. Johnson, Solar Architecture (Cambridge, 1982), p.56.

3. Johnson, pp.56-57.

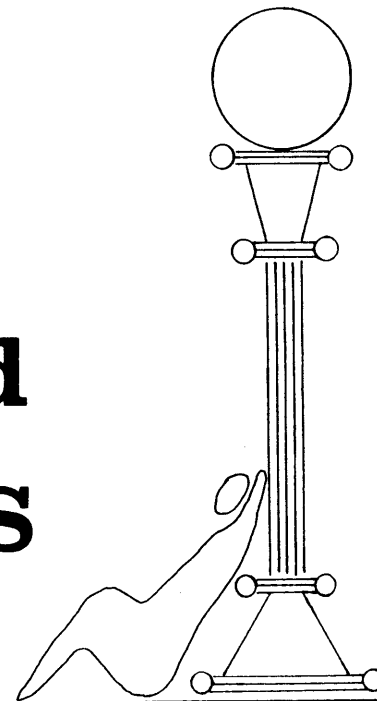
4. Johnson, p.64.

5. Johnson, p.60.

6. Johnson, pp.57-58.

CHAPTER 4

**PROGRAM and
PRINCIPLES**



Program

The overall program involves the demolition of the five hi-rises and the complete renovation of the remaining two structures. Sixty-two new townhouses will be built to occupy the site of the demolished buildings.

The Boston Housing Authority has devised a plan for the site based on input from tenant groups and a study of the density requirements surrounding the site. The result includes a set of quantitative guides which are relatively generous compared to HUD's Minimum Property Standards. These plans are accepted as a reflection of realistic housing needs in Boston. These are appropriate and generous details and will serve as a base for the design.

Important challenges are unveiled in the following program. Basically, it provides an opportunity to fit

current theoretical ideals to a practical problem; it combines the biases of rehabilitation with the unique creative allowances of new construction. The following plan should lead to maximum user satisfaction as well as an interesting architectural exercise.

PROPOSED UNIT AND HANDICAPPED MIX				
	Unit Mix	WA*	MI*	SI*
1BR	30	1	1	-
2BR	90	1	2	1
3BR	63	1	1	-
4BR	17	1	-	1
5BR	6	-	-	-
Total	206	4	4	2
* WA - Wheelchair Accessible MI -Mobility Impaired SI -Sensory Impaired				

BOSTON HOUSING AUTHORITY PROGRAM

Overall Development Plans

Substantial rehabilitation units	144
New Construction	62
Total	<u>206</u>
Acreage	7.8
Site Density units/acre	26.4

New Construction -Townhouses

Sixty two(62) new townhouses

45 three bedroom @ 1000 s.f.

11 four bedroom @ 1250 s.f.

6 five bedroom @ 1400 s.f.

• 5% of total to be designed for handicapped

• Laundry hook-ups for each unit

Substantial Rehabilitation

One hundred forty four(144) rehabilitated apartments

30 one bedroom

90 two bedroom

18 three bedroom(duplex)

6 four bedroom(duplex)

- First two floors of each hi-rise to be duplexed to provide large family units with front and back entries and private yards.
- Units on upper floors reserved for small families.
- Lobbies and elevators visible from street.
- Laundry hook-ups provided.

Non -Residential Facilities

Recreation Center-

Day Care Centers:

- 25 infant capacity
- Kitchen provided

Gymnasium:

- Basketball court
- General recreation space

Task Force Offices-

- 3 offices
- Conference room
- Reception area
- Storage area

Administrative Facility-

Management Facility:

- Reception area
- Manager's office
- Second office
- Conference room
- Rent collection facility
- Storage area
- Toilets

Maintenance Facility:

- Project stores
- Work shop and tools
- Supervisor's office
- Staff facilities:
 - Lunch room
 - Kitchen
 - Showers
 - Closets
- Mechanical storage

Principles

To suggest that a intrinsic relationship exists between people and their dwellings obligates some explanation of how this relationship is exhibited. It will be through such an explanation that the basic principles for this design are laid.

The relationship between an individual and the dwelling is multifaceted --some of those facets being far more critical than others. Throughout the early stages of this investigation, three different facets of this relationship were consistently given the most emphatic consideration.

First, that the physical decoration of the dwelling makes clear statements about status and rank was confirmed by the Samoan example.

Second, the dwelling is often the extention of or link to the natural

environment and protects and defines the territorial claim of the inhabitants.¹

Third, the dwelling is a vehicle for human expression, and it's characteristics offer tremendous psychological gains or drawbacks for the inhabitants.

In short, dwellings serve individuals in three capacities: as indicators of status and rank; as indicators of protection zones; and as vehicles for human expression.

The private housing market in this country offers the best example of how to satisfy user needs in housing developments simply because developers build what people want and buy. The public housing market lacks a similar economic dictate, therefore, satisfying user needs poses a lesser threat to full occupancy. Unfortunately though, when hundreds, of millions of dollars are spent on public housing developments that are

useful for only a fraction of the life of most private developments, it seems only reasonable then to adopt the principles that guide private developments --if only to achieve a more durable and valuable housing stock, but hopefully also to gain greater user satisfaction.

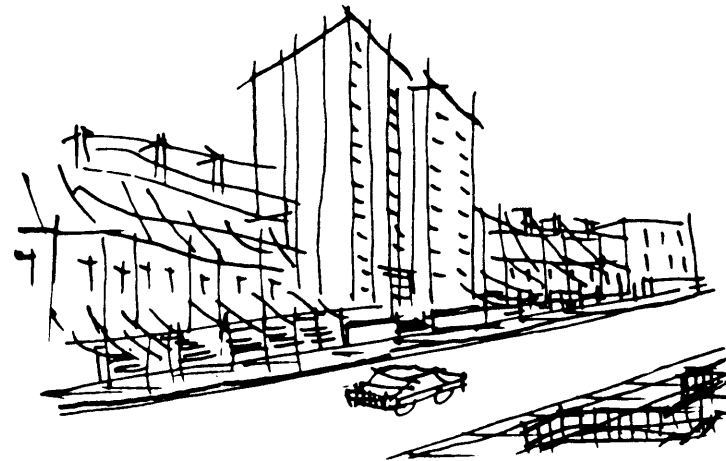
Inevitably, the private housing market inspires different architectural responses than public housing. Many more amenities might be included such as dishwashers, air conditioners, and garages. A variety of materials for building facades might be possible with more concern for a unique appearance. The houses might all be arranged around cul de sacs and tucked away from the streets. Guards might be posted at the main entrance to screen visitors.

Still more similarities than dissimilarities exist as amenities necessary to any present day housing development are recognized. The

following concepts and principles will be familiar to many of us; but for low income families that rely on publicly assisted housing, these principles must be reinstated and customized to accommodate the special needs of these families.

Develop a street pattern similar to traditional residential patterns and with a recognizable organization.

The traditional row-house street is considered by residents and police to be superior in design to the superblock configuration. Front entrances are easily surveyed by patrolling cars since there are well lit paths and individual lights over entrances.² Streets can be designed to create territorially defined areas, to restrict certain types of vehicular flow, and to make parking more accessible to residents.³



View of row house street. Source: Oscar Newman's Defensible Space.

Develop a site plan that establishes a hierarchy of spaces and encourages proprietary attitudes -- Symbolic Ownership.

The development can be subdivided in a manner that suggests that the grounds are under the sphere of influence of the resident.⁴ These attitudes help deter crime and shift some of the responsibility of maintenance to the inhabitant.⁵ Hierarchy plays an important role in the issue of access. The ideal form of access to a dwelling is from a public zone through a semi-private transitional space to a private entrance.⁶

Develop a scheme that allows personalization

A scheme that includes private spaces and details that accommodate expressions of individuality will help alleviate an institutional image. Families should have control over some outdoor space which provides the opportunity for individuality.⁷ Avoid



Above, renovated landscape at Commonwealth sets up clear hierarchy of spaces. Below, window boxes in Sommerville add personality to windows.



an emphasis on superficial trim which does not affect day-to-day life and does not accommodate the resident's own additions but uses up funds which could be better used elsewhere.

Develop a scheme with lends to visual variety.

This goal can be achieved by differences in color, size, building height, access to the buildings and opportunities for the residents to make changes.⁸

Accommodate use patterns which are indigenous to the area.

The use of housing types, materials and use patterns that are common to a particular area is important in relieving the stigma of public housing. For example, how are the streets used? Are they used for access? Parking? Play? Or is play restricted to playgrounds and open lots? Some differentiation might be welcomed, but not to the extent that the differences become conspicuous.

Incorporate a variety of outdoor areas for all age groups and levels of ability.

Space should be provided for the group activities of infants, children, teenagers, adults and the elderly. Many of these areas will overlap. Since children will use the site to a far greater extent than other age groups, special consideration should be given to their outdoor play.⁹

Use traditional compositions and materials that are energy conscious and avoid grade appearances.

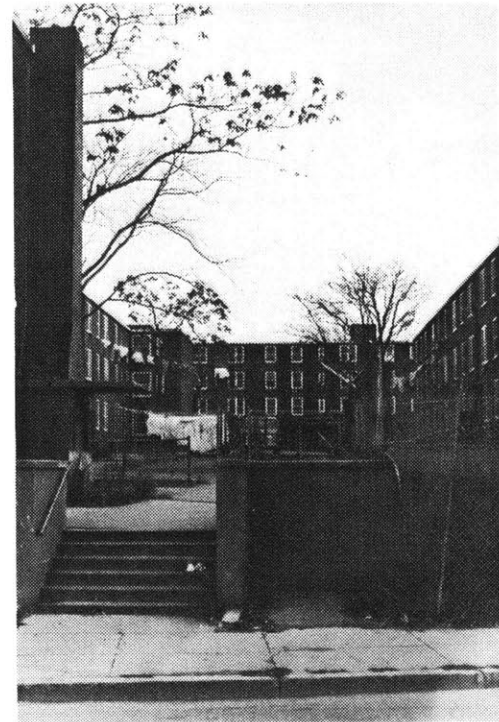
Clare Cooper notes in Easter Hill Village that the lower the income group, the less avant -grade the architecture --that unusual appearances are undesirable. Traditional construction materials and techniques will help to save time and money. Materials like wood, masonry, concrete and standard insulating fibers can be arranged to take advantage of new found concepts in solar architecture.

Encourage through design the casual surveillance of street and gathering spots from within the house.

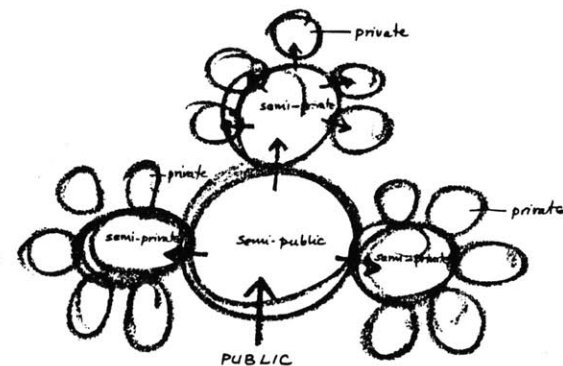
Knowledge that someone is watching will have positive effects on the type of activities that go on in the area under scrutiny.¹⁰ Bordering streets should be open to natural surveillance by residents, and communal areas should be overlooked by residents inside their homes.

Employ a variety of landscaping techniques to soften and help define the environment.

Earthmoving, decorative fences, and/or continuous hedges can reduce harsh building lines and enhance entrances, roads and parking areas. Symbolic barriers such as plantings, changes in surface textures and level changes should replace real barriers such as chain-link fences or U-shaped buildings.¹¹



A courtyard at Mission Hill Main. Demonstrating Oscar Newman's Defensible Space diagram below.



Enhance some sense of community
without invading privacies or
inducing feelings of being crowded.

The organization of buildings are a chief means of inspiring feelings of community, but should be done without putting neighbors too close to each other. Concentrating units around small areas also concentrates the number of children and challenges the visual and acoustical privacy of families. Well used common spaces instead could help to inspire a sense of community.



Renovations at Commonwealth.



Programmatic Translation to the Site

What is important at this point is the identification of the architectural parts that affect the image and economical ways to manipulate these parts. This consideration is necessary in order to translate the preceding principle to the design of the site. Several architectural elements affecting the image can be identified with reference to the site plan, the townhouse design, and the appearance of the hi-rise buildings.

THE SITE PLAN

Where the organization of the site is concerned, four elements of site planning are observed to affect the image of the development:

(1) Distinction of public and private territories; (2) Placement of buildings; (3) The nature and distribution of outdoor activities. Moreover, for each of these elements, a list of tools for their manipulation can be established.

Distinction of Territories

•Circulatory System-

Pedestrian and vehicular paths, paths are instruments in defining public and private zones. Their placement as dividers, boundaries and places help to distinguish public from private.

•Proximity to Buildings-

Generally, private territories are closest to the dwelling and public territories further away.

•Plantings-

Plants also help to distinguish public from private territories.

The Placement of Buildings -

- Access to dwellings-

The position of the entry can vary from rowhouse to rowhouse.

- Groupings of buildings-

Buildings can be grouped to accommodate visual access to open space from the dwellings and to open space from the street.

- Territories-

Front and back yards are distinct private territories for rowhouses and duplexes.

Landscaping -

- Trees and shrubs-

To beautify, block wind, buffer zones, or define territories.

- Earthmounds-

To soften views, define territories, channel/block wind.

- Circulatory system-

To define territories, or organize access.

- Walls and fences-

To define boundaries block views, contain sun.

Nature and Distribution of Outdoor Activities

- Tot lots-

To accommodate infant play and lounging for elderly residents.

- Public gathering-

To provide community space and safe place for hanging out.

- Parking Areas-

To store automobiles, often for children's play, can be made attractive.

- Sports facilities-

To accommodate the need for organized activities and a place to

THE TOWNHOUSE DESIGN

For the new construction, six design considerations leading to a successful image are identified:

(1) Differentiation between units;
(2) Attractiveness of facade; (3) Adequacy of spatial allotments; (4) Separation of public and private zones;
(5) Provision of opportunity to personalize; (6) Visual and acoustical privacy allowances. For each of these design considerations economical moves are listed which would help to achieve a successful image.

Differentiation between Units

Differentiation can be affected by variation in: building height, color, position of entrance, and building set-back.

Attractiveness of Facade

•Choice of materials-

Assuming, for economy, a restricted palette of materials, the choice would depend on color, texture, durability, identifiability as a residential form. For example concrete cinder blocks are economical and



Differentiation in individual units for a private housing development.

durable, but unless well maintained they project an institutional image and suggest a more temporary rather than permanent tenure.

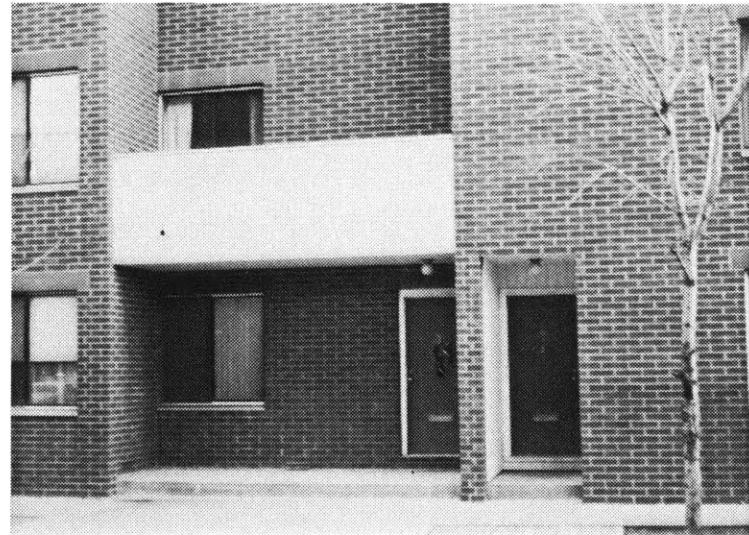
- Organization of Fenestration-
Contemporary interpretations of traditional organizations can help achieve a stylish effect without being unusual.

Adequacy of Spatial Allotments

Residents need spacious and furnishable areas for; sleeping, dining, family sitting, cooking, and bathing. Adequate space is also needed for storage and laundering.

Separation of Public and Private Zones

- Entryways and doorways-
Can be isolated to avoid imposing on private zones.
- Circulation-
Halls can define as well as link zones.



Variety in entrances at Brookline Village.

Personalization

- Interior rooms-
Walls space for wall hangings and furnishings.
- Facade-
Provision of window boxes for plants, window shelves and sills for trinkets, porches for furniture and unit addresses.
- Frontyards-
Plants, grass, and lawn furnishings help personalize these zones.
- Backyards-
May be a private space or open to public view. Gardens, storage units, furniture, pets help personalize these zones.

THE HI -RISES

Since these are the largest structures on the site, they will greatly affect the image of the development. Three basic elements of design affect the appearance of the

hi-rises; (1) Massing; (2) Entry; and (3) Facade.

Massing

- Roofline-
Slight additions to the roof, some pitched portions and greenhouses are possible and help redefine the imagery of the hi-rises and the uses of the roof.
- Addition of bays-
Bays function to add more room to individuals units as well as give relief to flat facades.

Entry

- Lobby-
Dimensioning and visible location help make this space read as a safe collective space.
- Number of entry portals-
Consolidating entries minimizes security risks and heightens through intense usage, the sense of territory belonging to the

hi-rise.

Facade

•Materials-

In this case, diversifying materials can introduce new colors, textures and add relief to endlessly flat facades.

•Fenestration-

Accentuating and consolidating openings can liven up facades and help make windows recognizable.



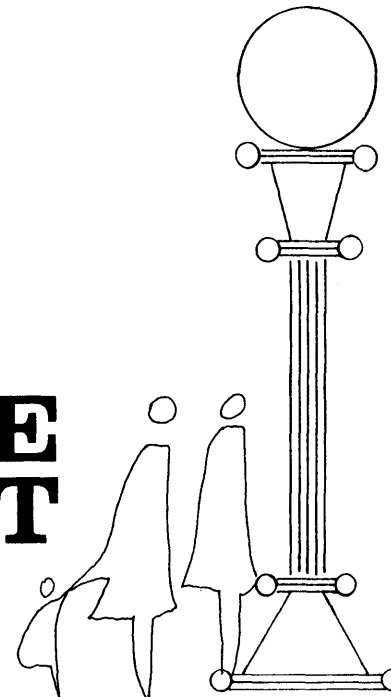
Greenhouse additions to windows at Roosevelt Towers in Sommerville make a nice place to display items.

Notes

1. Bernard Rudofsky, Architecture Without Architects (New York, 1964), preface.
2. Oscar Newman, Defensible Space (New York, 1973), p.80.
3. Boston Housing Authority, Cathedral Comprehensive Redevelopment Plan, Phase Three: Proposed Redevelopment Plan (Boston, 1982), p.3.
4. Newman, p.53.
5. Clare Cooper, Easter Hill Village
6. Cooper, p.225.
7. Cooper, p.9 & 81.
8. Cooper, p.142.
9. Cooper, p.103.
10. Newman, p.78.
11. Newman, p.64.

CHAPTER 5

SITE DEVELOPMENT

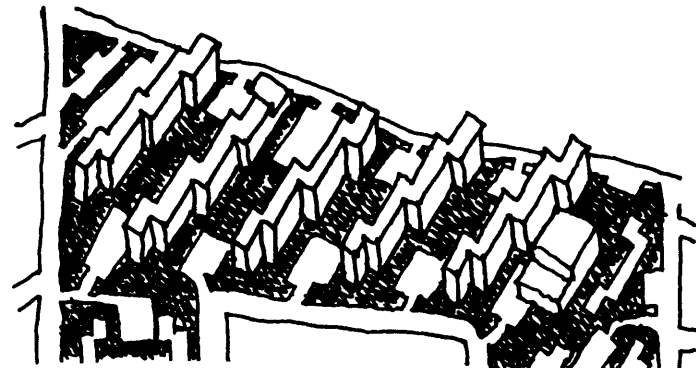


Derivation of the Site Plan

INVESTIGATING ALTERNATIVE HOUSING TYPES

So far, it has been established that user -oriented housing has three basic functions: to indicate status and rank, to indicate protected zones, and to provide for personal expression. Site development plays an important part in satisfying the basic functions of user -oriented housing, and it is at this point that the manipulative tools and site information unveiled in Chapters Four and Three, respectively, are utilized to organize a site which generates positive images for public housing.

This chapter is organized into two parts. First, it describes how the site plan is derived. Then it discusses the product and how the plan responds to programmatic issues.



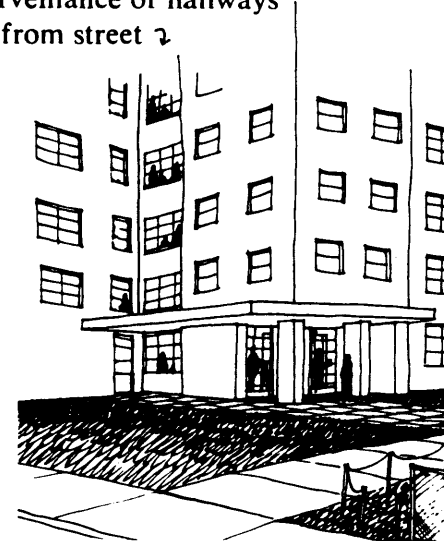
The five seven-story buildings at Mission Hill Extension.

appearance of the site and the relative arrangement of the buildings are instant identifiers of housing projects. Modernization is meant to improve the physical standard and appearance to the development. It is even possible to restore an aesthetic and dynamic balance that has faded or perhaps never quite actualized for a site. Creating a entirely new balance for a site is often thought to be the most suitable means of restoring quality to the residential environment. The demolition of three of the five hi-rises is a way to achieve new balance at the Mission Hill Extention site. Sixty two new townhouses are to

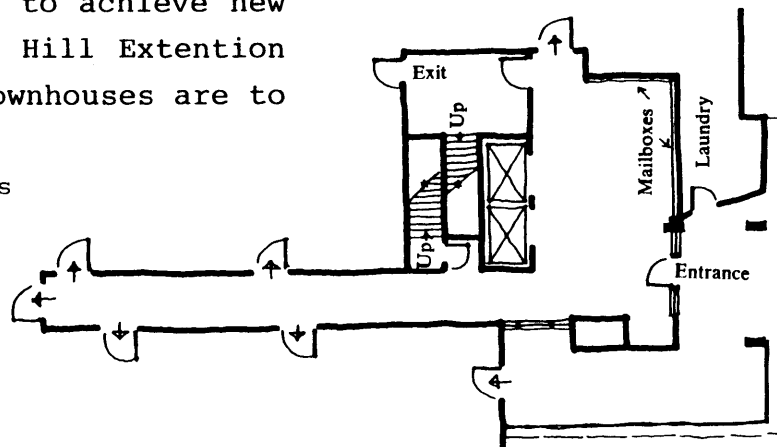
The lobby at Tilden Houses in Brooklyn, NY is surveyable from the street.

Source: Defensible Space, Oscar Newman.

Surveillance of hallways from street ↗



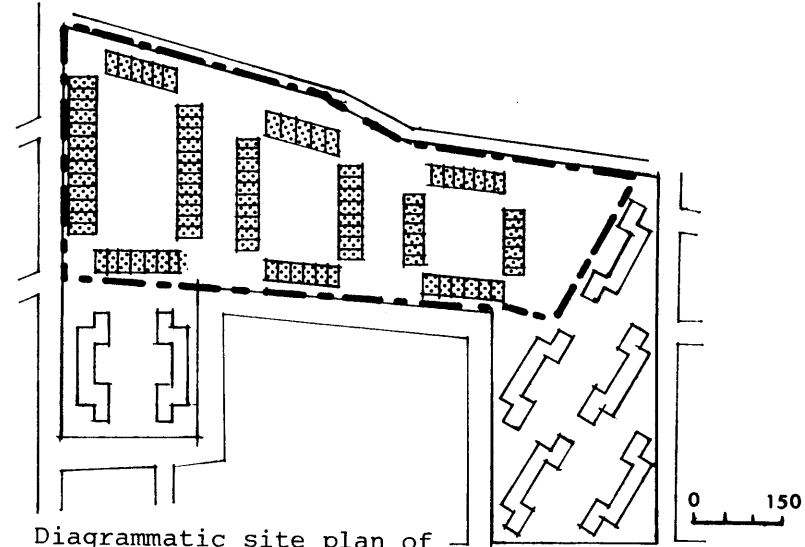
Surveillance of lobby from street



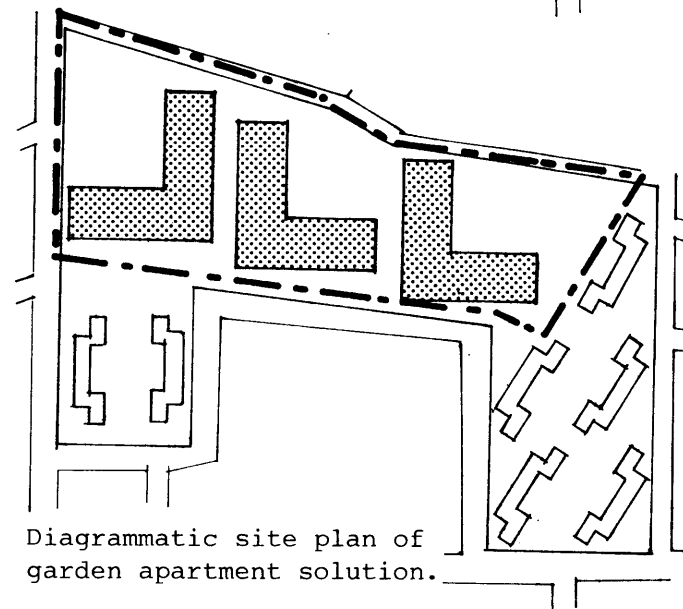
be built and two of the old hi-rises are to remain. However, if the physical characteristics of the hi-rises are instant indicators of public housing, perhaps a new building type can be utilized to dispel the institutional image. This part of the investigation is aimed at exploring the creative devices available to the designer before assuming the programmatic constraints for the site.

The practical constraints involved are density and the provision of private territories for families. Possible housing types to choose from include: rowhouses walk-ups, or some combination of row house/ walk-ups --row housing where some portion is devoted to single story units, one above the other or two story units above a single story flat.

The row house scheme illustrated is monotonous and does not provide the required density.



Diagrammatic site plan of rowhouse solution.

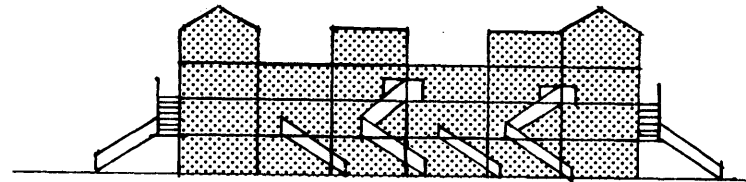


Diagrammatic site plan of garden apartment solution.

Garden apartments require large areas of land as did the hi-rise and raises questions as to the futility of tearing down several high density structures for several more high density structures.

The row house combination walk-up scheme is the most interesting possibility. It is not hard to envision the same kind of architectural subtlety for high density housing here that was achieved at Mission Park where at least two units fit into a townhouse type structure. However, to achieve the density required for this project, four stories would be necessary for many units. This is not feasible since there is no sloping terrain to absorb four stories. Zoning and fire safety requirements are also a consideration.

Kevin Lynch's residential density chart summarizes the densities various housing types can accommodate. It further demonstrates that retaining



Elevation illustrating the rowhouse/walk-up solution.

Densities by Residential Type	
Type of Unit	Families per acre
Single Family	5
Two- Family	7
Row Houses	12
Combined Row house and walk-up flats	16
Three-story walk-up	20
Six-story Elevator	28
Thirteen-story Elevator	31

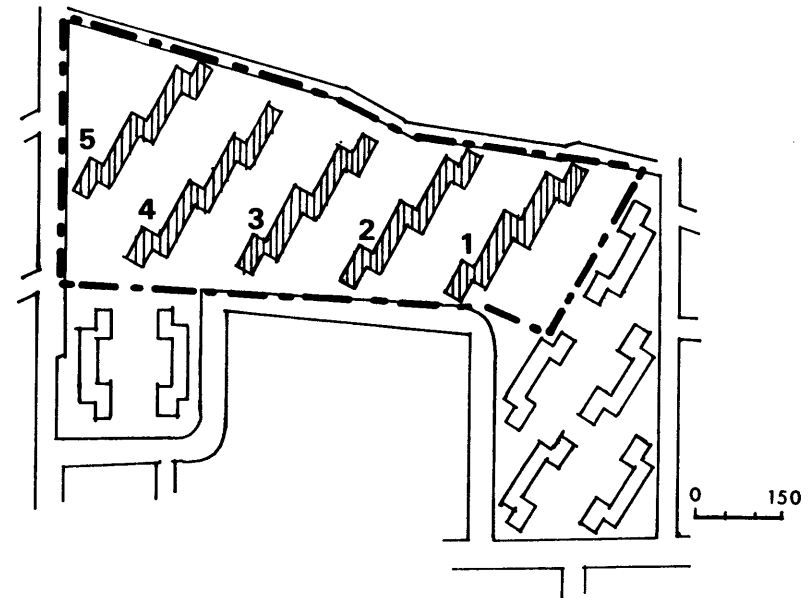
Source: Site Planning, Kevin Lynch, MIT Press.

these hi -rises is necessary in order to achieve the goal of twenty six units per acre.

CHOOSING THE HI -RISE TO BE KEPT

The choice of the two hi -rises to keep has it's roots in the observations made in the site analysis and in the organic design philosophy that underlies the preceding design principles.

The organic approach views grounds and buildings as an interrelated whole. The primary concern is the way in which the buildings serve to define and break up the grounds.¹ Locating the hi-rises is a critical step since their form and orientation are such powerful signals for the subsequent definition and use of the grounds. From the site analysis comes an equally important set of guides.

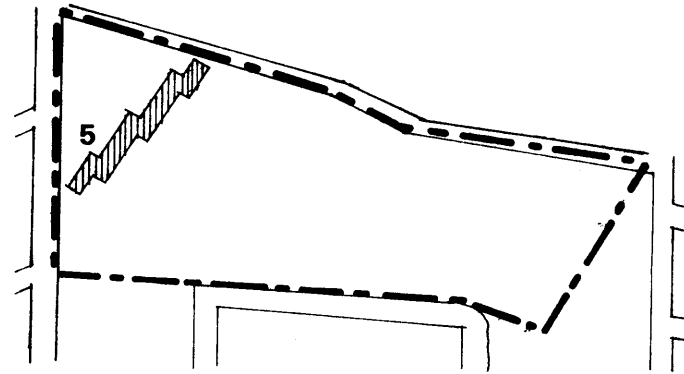


IDENTIFICATION OF BUILDINGS

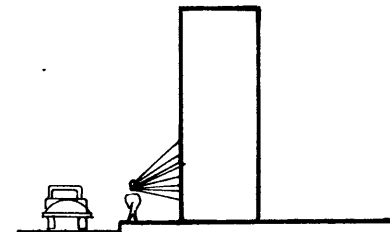
It has already been observed that not much in the way of architectural precedents affects the site as it is bounded by parking lots, industrial - looking buildings, and more public housing. Ruggles Street is a busy artery and the public's first impression of the site. Also, as tall objects on the site, the hi - rises must be carefully distanced from adjacent structures to alleviate wind effects.

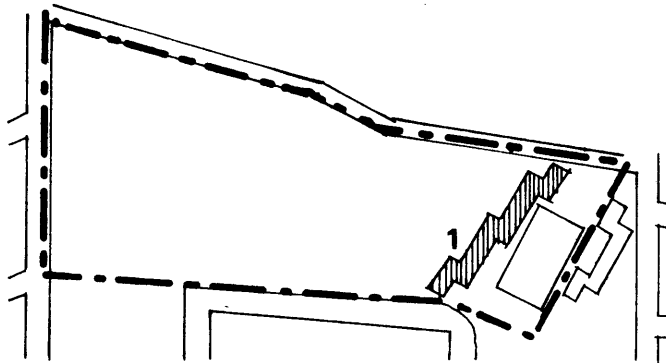
Given five identical structures, each one can be examined for the suitability of it's location. Through this process, and virtually by elimination, the two hi - rises to be kept can be pin - pointed.

Consider first, any choice of two buildings that includes building number five. This building is located at Ruggles Street. From the public's point of view, it is a visual barrier to the site. Coming from the Orange line station especially, this building

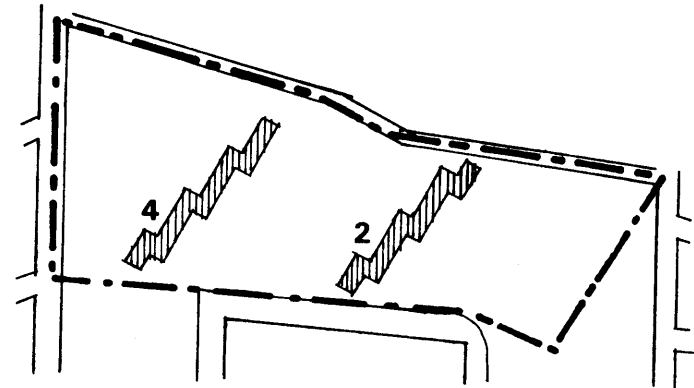


Building 5 is too close to street edge and blocks any communication to the rest of the site.

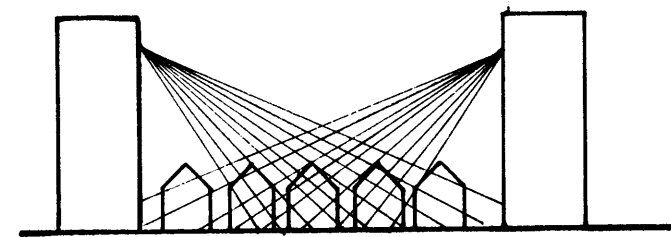
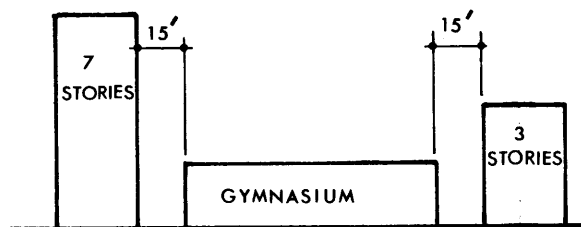




Building 1 is too close to gym which is also too close to the three-story building. Three different building types within one small dimension.



Townhouses between buildings 2 and 4 would always be under the scrutiny of the residents in the hi-rise buildings.



blocks the communication the public would have this new development, and, because of it's size and length, it encloses the rest of the site regardless of whichever other building remains. Since building five threatens the exchange of positive information to the public, it is not a good first impression for the site.

The consequences of keeping buildings number two and four can be argued similarly. In this case, the argument is made for the organic approach to design and the concern for the land uses the building location will allow. Buildings two and four divide the remainder of the site into three separate zones --one at Ruggles Street the other next to the gym, and the third between the two hi -rises. These locations are problematic since they dictate that many of the townhouses will always be observable by residents in the hi -rises. Hence,

the chances for privacy out -of -doors of these units are minimized.

Finally consider any choice of two hi -rises that include building one. The problem with building one is that it's too close to the gym and the three story walk -up. The gym is squeezed between the two buildings; the result is a very cramped space for recreation.

The choices remaining are buildings two and three or buildings three and four. Both these alternatives involve adjacent hi -rises. It can be argued that having two hi -rises together enhances the opportunity for a community about the hi -rises. The territory between them is easily defined as belonging to the hi -rises, and many more opportunities exist for linking the two buildings within that space. In any event, the choice depends in part on the considerations given to the organization of the townhouses which is discussed next.

ORGANIZING PATTERNS FOR THE TOWNHOUSES

The arrangement of the townhouses plays no small part in the overall organization of the site plan. Organizing patterns for the townhouses also conform to clues from the issues discussed in Chapter Four on the program and principles. In that chapter, such issues were discussed as traditional and recognizable street patterns, territoriality and symbolic ownership, visual variety, surveillance, and privacy. Each of these objectives will have some part to play in the organization of the townhouses.

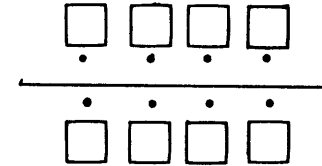
The organization of the townhouses can be dealt with on two levels. On a smaller scale, it is possible to just deal with the relationship of the townhouses to each other and the street. On the larger scale, it is possible to talk about an overall organizing scheme on the city block scale.

The Residential Module

The relationship of the town-houses to each other and the street can be classified as a residential module. Kevin Lynch, in Site Planning, diagrammatically describes a range of possibilities for these relationships.² Only a few modules are necessary to describe the applicable relationships for this site. Four basic modules apply: street facing units, cul de sacs, end-on -units at courts, and end-on -units front to back.

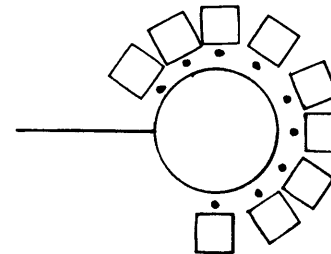
Street Facing Units-

Houses with their entrances facing onto a single street provide optimal surveillance opportunities from within the house. Should the pedestrian paths coincide with vehicular rights of way, a very direct and clearly defined system of circulation results. However, repetition of this module type maximizes the required street frontage, and street frontage



Street Facing Units

Optimizes surveillance opportunities.
Maximizes street frontage required.



Cul de Sac

Maximizes opportunities to socialize,
but could be forcing unwanted
associations.

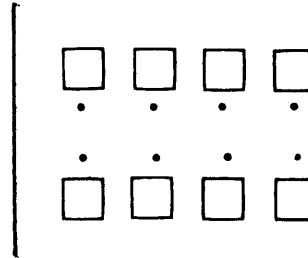
is costly in terms of money and in terms of the limited land available.

Houses Around a Cul De Sac-

The cul de sac invites residents to socialize, but dictates that the families involved share a finite common space unlike the two directional common space afforded by the linear arrangement of the street facing units. Clare Cooper warns that such a strong architectural gesture toward increasing sociability may be a mistake.³ People should have a choice as to with whom they will be sociable. Besides, the cul de sac arrangement requires a much more forgiving piece of real estate than the Mission Hill Extension site. This small, irregularly shaped lot cannot accommodate such a land intensive, rural form.

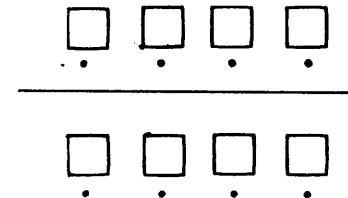
End on Units-

Houses placed end-on with their entrances opening onto a pedestrian court creates a very intimate setting. This organization diminishes the



End on Units

Units facing each other creates intimate setting. Entries placed on semi-private court diminishes surveillance opportunities from the street.



Front to Back Units

The most compact way to place houses on the site. Front to back views are unpleasant though.

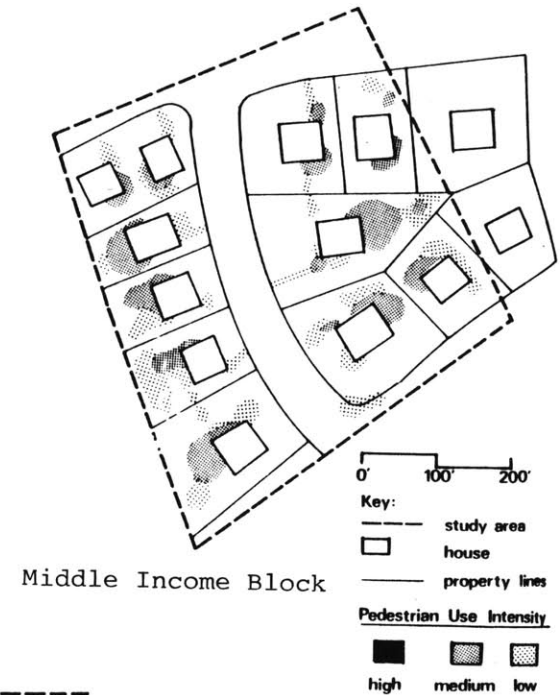
surveillance capacity of the units as the street is now bordered by side walls and is not continually observable. The court is now the protected zone secured for peaceful activities, although it may face the same problems of confinement as the cul de sac.

End on Units Front to Back-

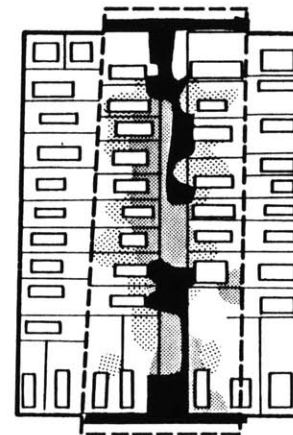
Houses arranged such that fronts face backs with some opportunity for pedestrian traffic between might be the most efficient way to squeeze units onto the site, but it would certainly be the most uncomfortable. A front to back orientation insures a poor view for everyone. The only hope for this type of arrangement would be to expand the pedestrian path so that it is wide enough to become a public place. The views may be greatly improved, but repeating this module would be impractical.

The City Block

Following the directives of early planning manuals, many housing



Middle Income Block



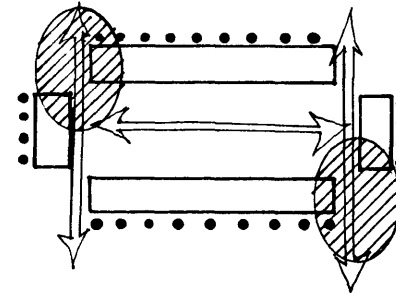
Low Income Block

PEDESTRIAN USE INTENSITY
Pedestrian use intensity varies in low income and in middle income neighborhoods. Source: Neighborhood Space

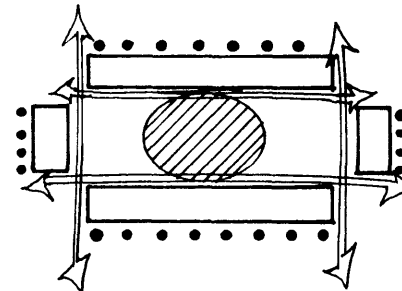
projects have been intentionally designed to look inward on themselves. Medium density rowhouse type projects have only the ends of buildings on the bordering streets. Entries and windows face the interior of the project, and the bordering streets are closed to natural surveillance by the residents.⁴

Where the statement of program and principles calls for a traditional and recognizable organization of street, no other organizing form is more appropriate than the city block. Likewise the designer who abandons the institutional planning approach for the traditional city block opens the door not to archaic and rigid patterns but to a classically adaptable and accepted form.

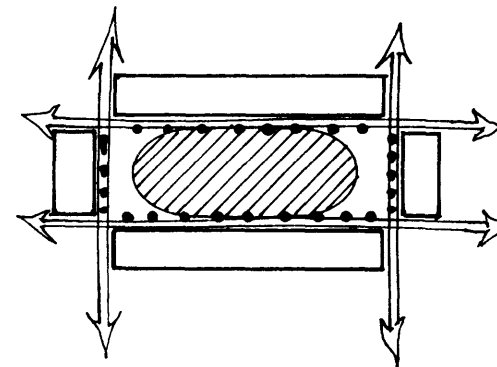
The city block is known everywhere and in several variations of the main theme. It is popularly known as a rectangular arrangement of streets onto which townhouses face. Three



City Block Diagram 1.



City Block Diagram 2.



City Block Diagram 3.

main city block types are observed.

The first diagram shows a block with a single line of pedestrian/vehicular access behind the houses. At each corner is the opportunity for open space, parks, plazas, or larger commercial structures.

The second diagram shows a block with pedestrian/vehicular access behind the units and encircling some open space in the center. The zone is hidden from public view and becomes a semi-private territory for the residences.

The third diagram depicts a block form that is commonly referred to as a square. The Streets outline a central public space all of which is observable from the units lining the streets.

The city block in any of its variations can be combined with the residential modules to create an exciting environment. Furthermore, a

better sense of the spatial dictates the townhouses impose on the site is obtained from this consideration of city block. Clearly, this is a significant form in many ways, as it satisfies the programmatic requirements of defensibility, visual variety, and hierarchy of spaces. Having this understanding, the decision of which two hi-rises to keep is easily justified based on the physical constraints examined and the possible arrangement of the townhouses.

The Product

It is now possible to identify the "givens" for the site plan, that is, what are the accepted physical constraints of the site. Three key constraints have been discussed, and firm decisions can be made.

Figure ground diagram 1. points out the accepted physical constraints.

First, the Ruggles Street edge is given to the townhouses since more opportunities exist to open up the site to public view, to place the street under the territorial jurisdiction of the townhouses, and to generate positive information through the use of new buildings. Second, hi-rises two and three will be kept since this combination opens up the largest area of land near Ruggles Street and allows the majority of the townhouses to be arranged together, making for a more coherent organization of townhouses. The hi-rises establish a very strong directional field that is better to accept than to try to alter. Third, the city block organization will be used to organize the townhouses since it optimizes the desirable traits necessary for these units.

Figure ground diagram 2. depicts an arrangement of the townhouses that conforms to the orthogonal orientation

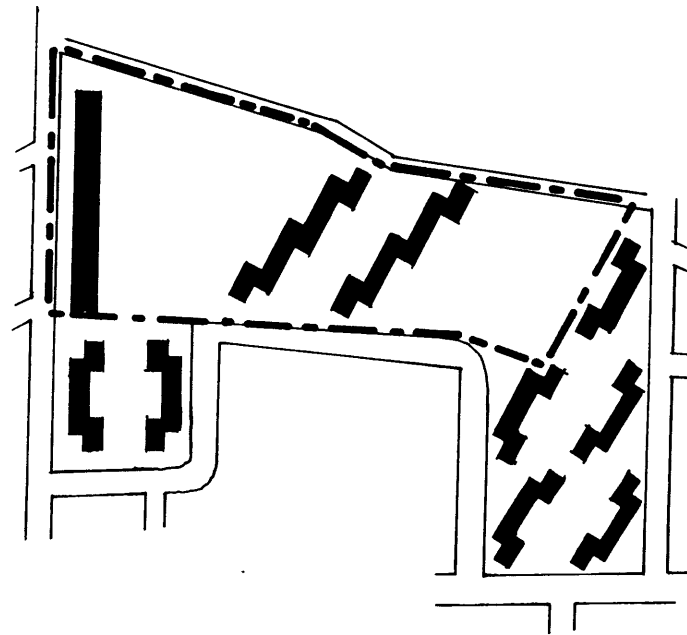


Figure Ground Diagram 1.

established by the Ruggles Street units and with subtlety picks up the directionality of the hi-rises by staggering the rows.

Figure ground diagram 3. indicates a more comprehensive response; it addresses both orientations established by the Ruggles Street units and the hi-rises. In addition, this arrangement loosely starts to organize the townhouses into city block form. Both the second and the third figure ground diagrams offer viable solutions, but a better organization lies somewhere in the middle.

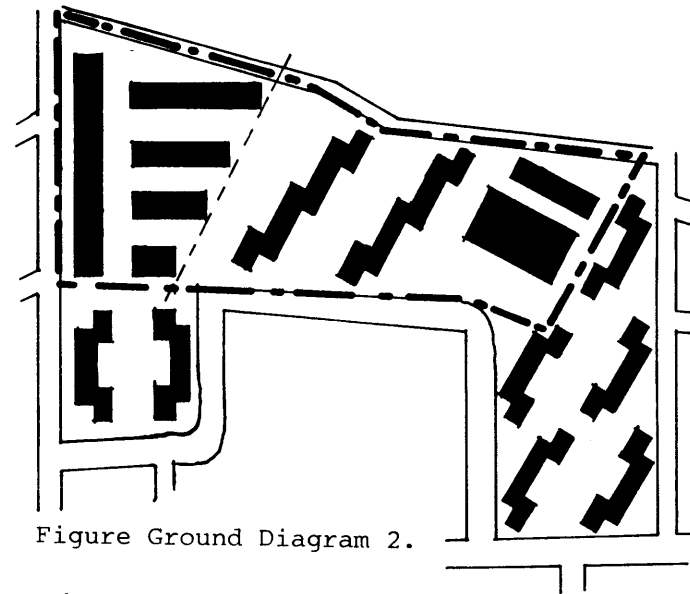


Figure Ground Diagram 2.

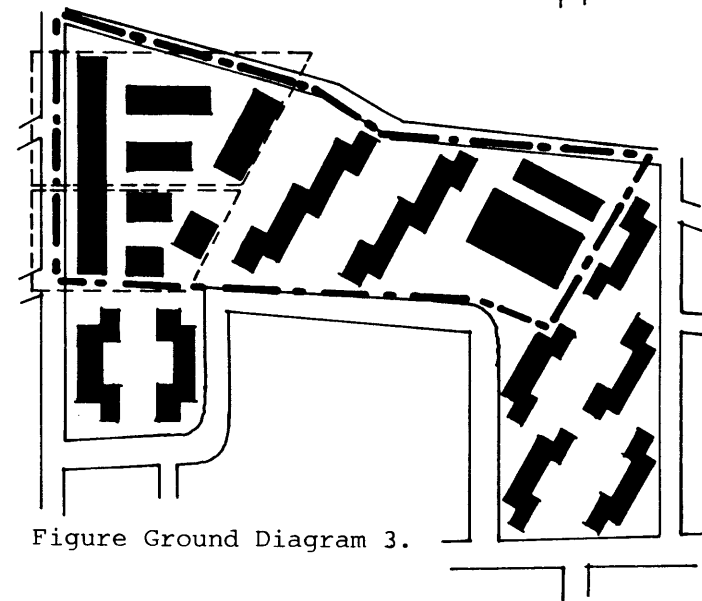
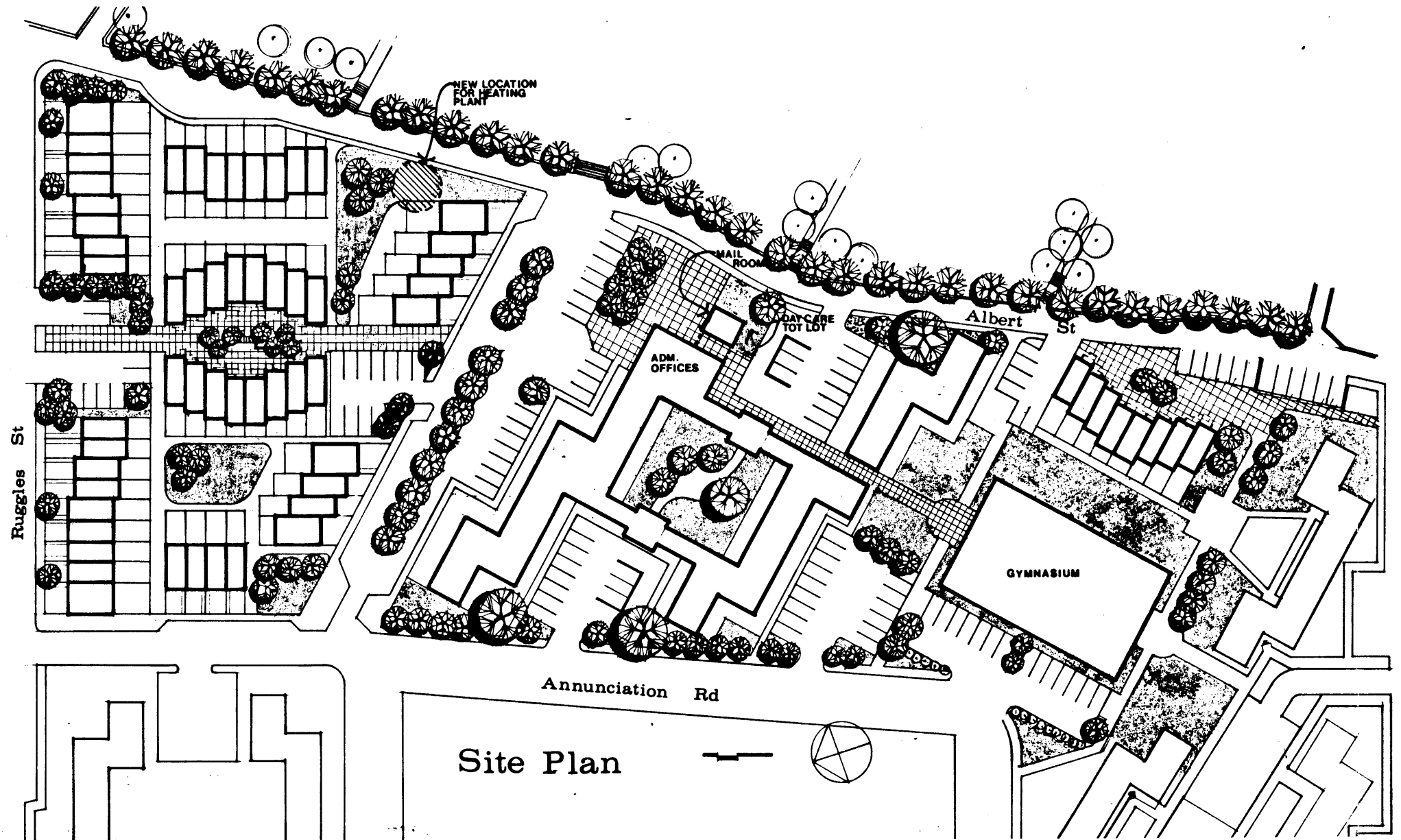
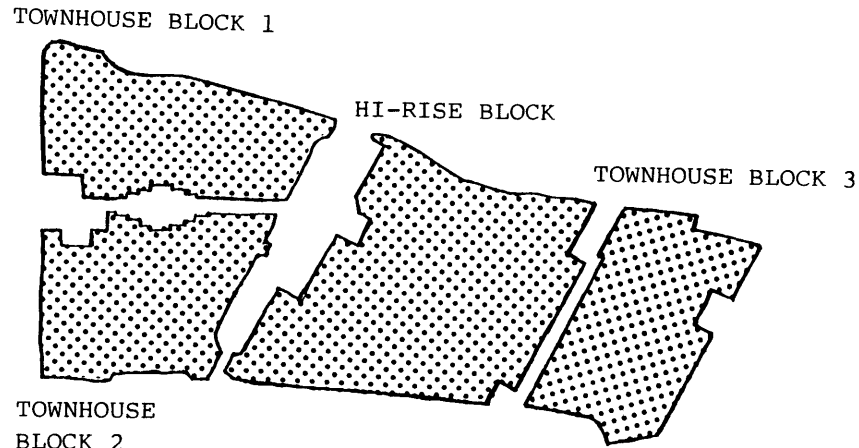


Figure Ground Diagram 3.



Site Plan



BLOCK ORGANIZATION OF THE SITE

THE SITE PLAN

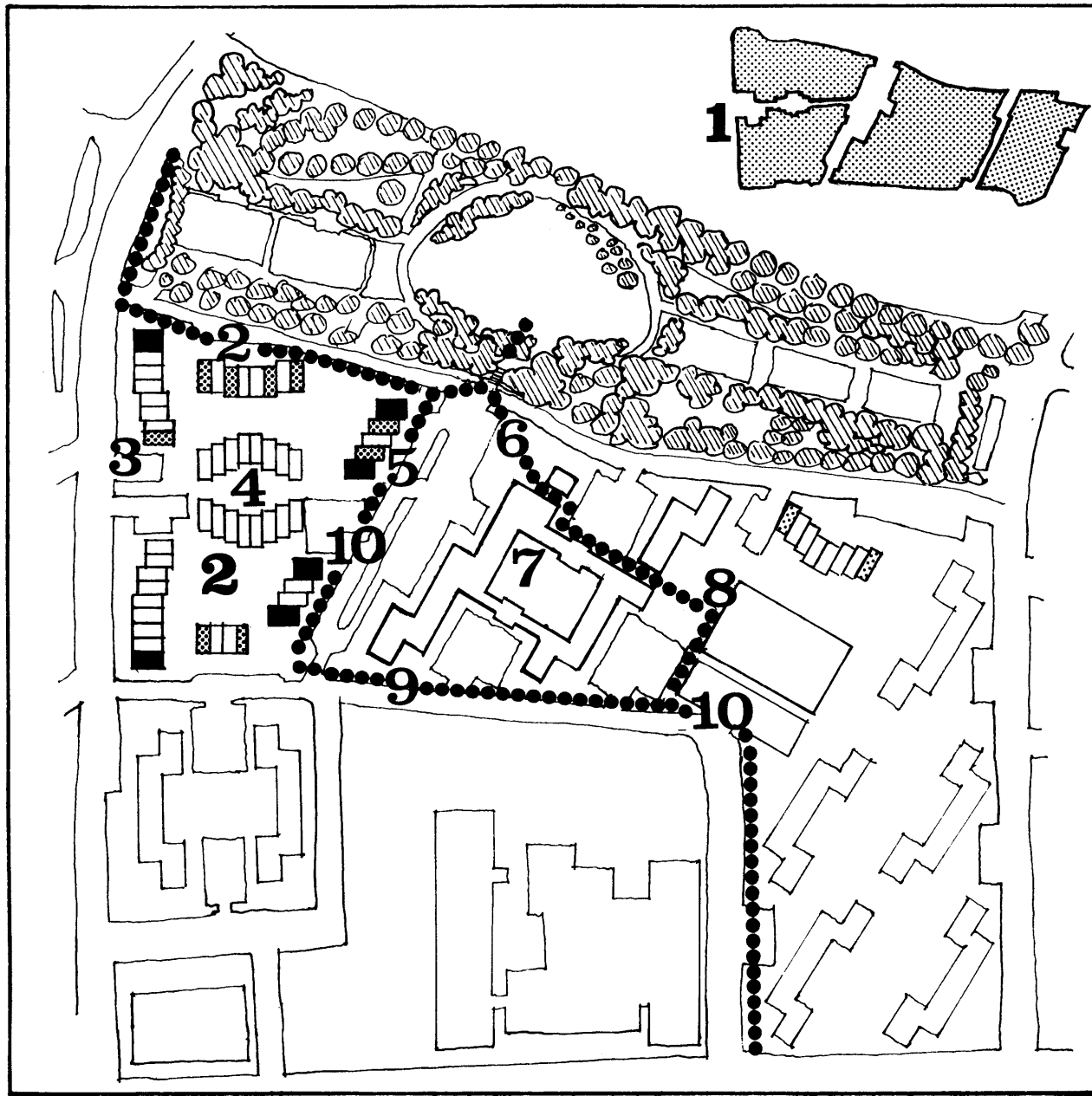
The resulting site plan combines the second figure ground scheme with the third figure ground scheme.

1-The site is organized into four general blocks which are connected and

interlocked by a major pedestrian path. This path can be accessed at any number of points, and is composed of a varying sequence of openness and closure from one extreme edge to the other.




2- The four blocks represent two basic communities --a community of townhouse residents and one of hi-rise residents.

The townhouse blocks are comprised of streets onto which townhouses face, although the street dividing the two blocks is strictly pedestrian rather than vehicular. The townhouse lots consists of a front yard, the unit itself, and a backyard. Not all yards are the same size, but much of the site has been placed under the sphere of influence of the residents. The varying yard sizes accommodate those families who do not want or need much yard space as well as those who do. As stated before, placing more of the public property into private

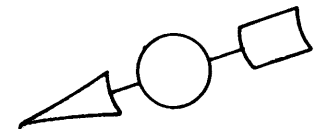


SCHEMATIC SITE PLAN in context with unit distribution

key:

-  3 Bedroom Unit
-  4 Bedroom Unit
-  5 Bedroom Unit

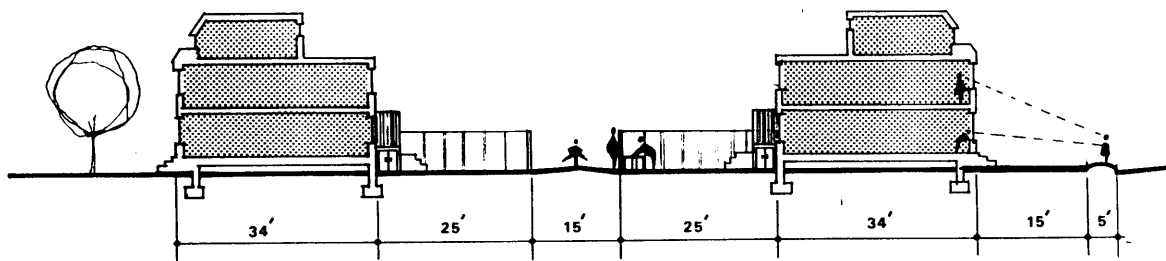
●●●● Likely pedestrian
route from Mission
Hill main



territories shifts maintenance responsibilities away from management to the tenants. This shift in maintenance may directly satisfy two of the three basic functions of user-oriented housing. Having control over the space adjacent to the house allows greater freedom of human expression and an opportunity to reflect one's status in the community. The backyards empty onto wide pedestrian paths that lead to depots for trash collection, and may also

serve as raceways for bicyclists, roller skaters, and similar play activities. In the case of the northern most block, the backyards enclose a private tot lot that is screened from public view but observable from the units.

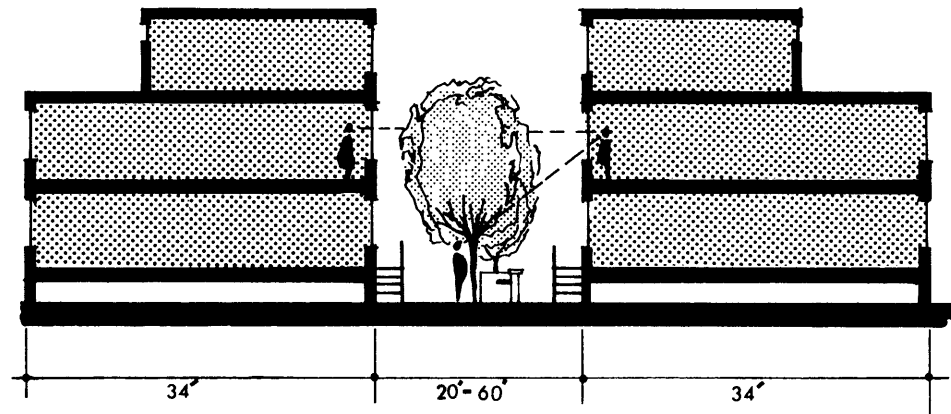
3- The Ruggles Street border is built up on townhouses which step back toward the main entrance of the pedestrian path. This stepping culminates in a symbolic gateway to

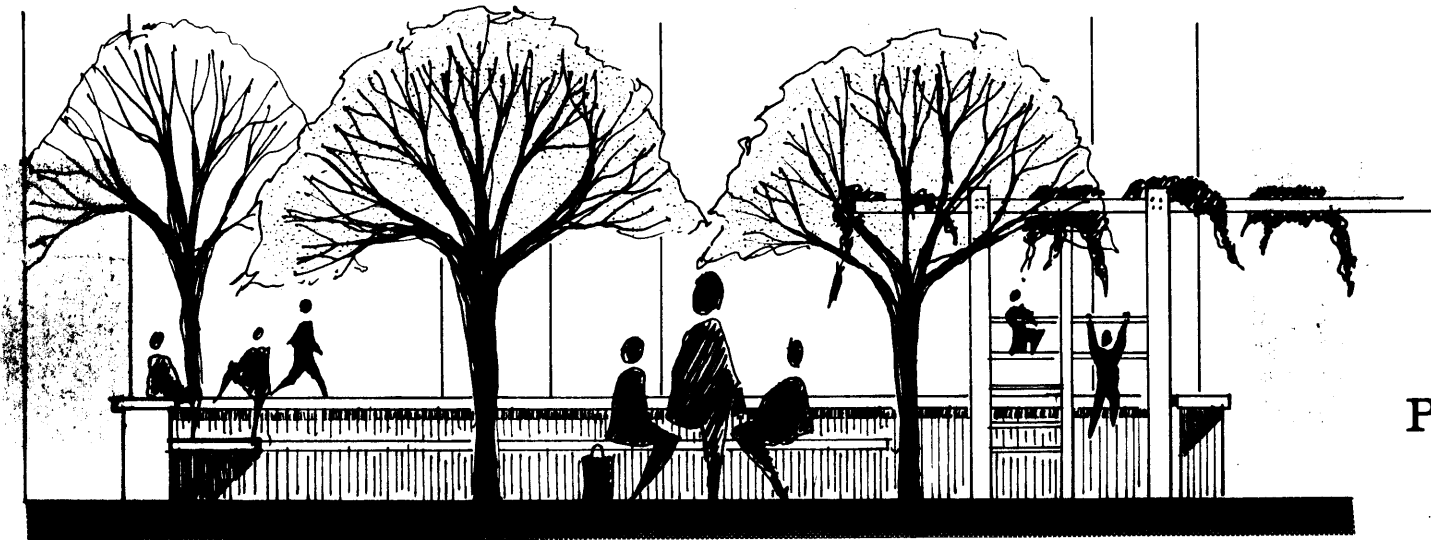
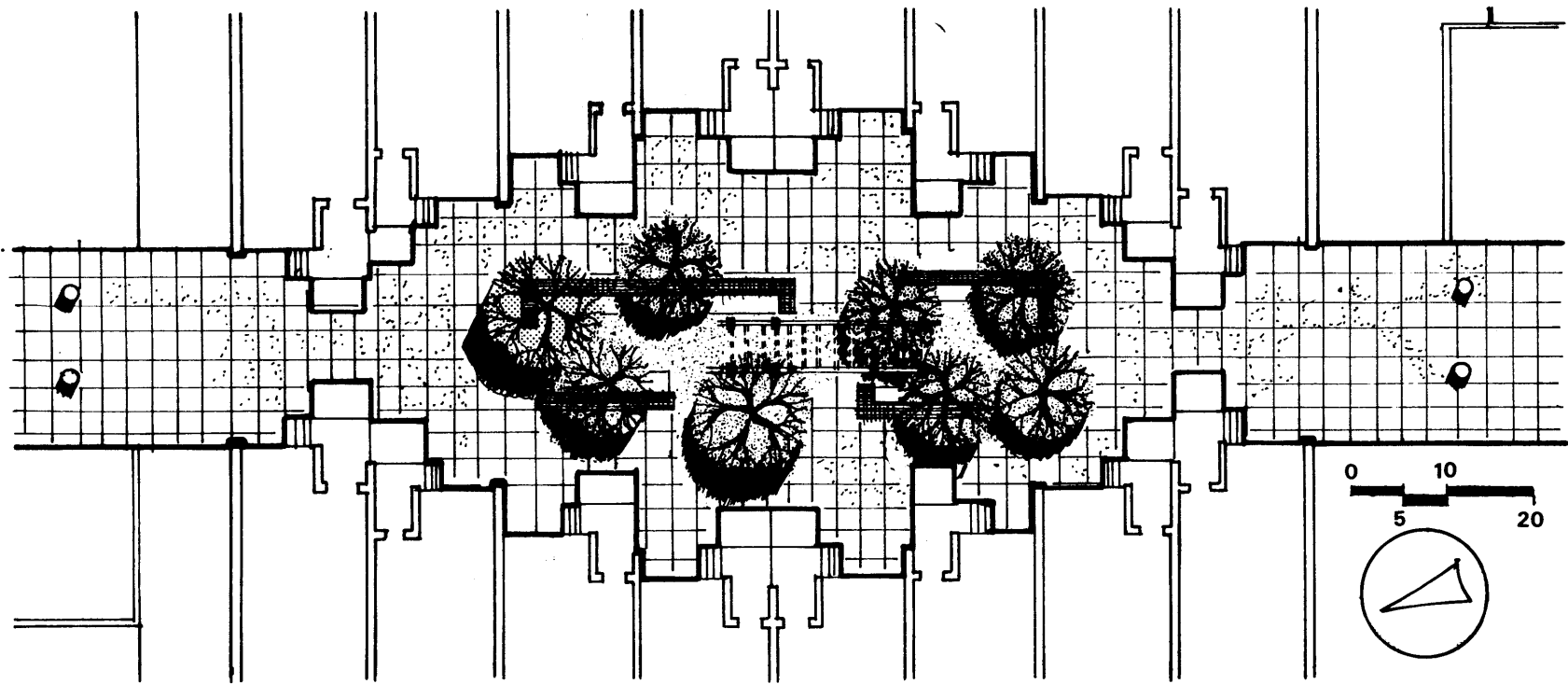


the site and suggests to passersby that the site is a hospitable but not a defenseless place to be. Some parking for the Ruggles Street units are provided here also and remains distinctly apart from the pedestrian right of way.

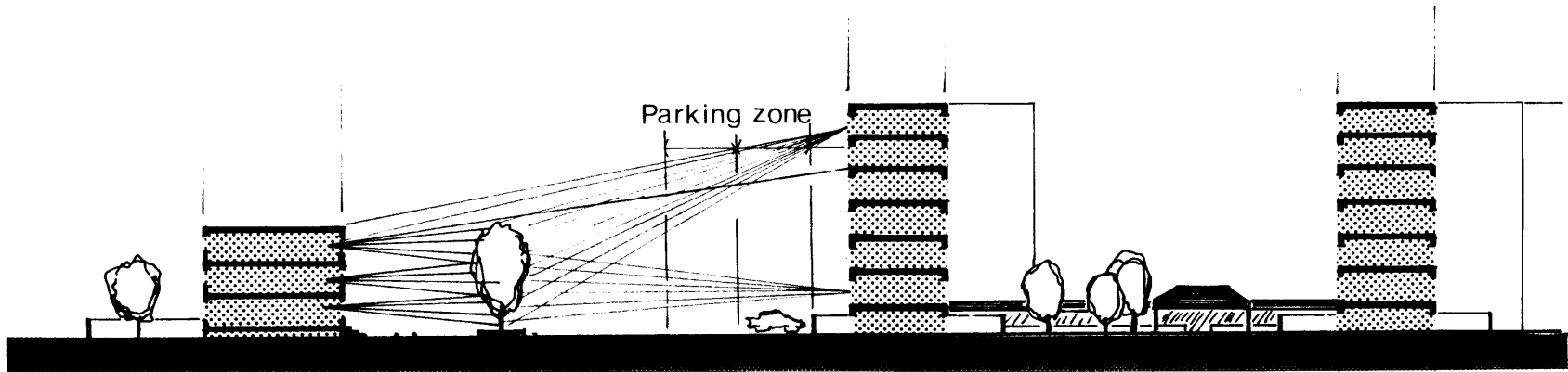
4- Having entered the site, the pathway leads immediately to a pedestrian court and treed sitting area around which three bedroom townhouses have been arranged. This arrangement offers older residents or those families furthest along in the life cycle a more intimate living environment while it contributes to the aesthetic variety throughout the site as a whole. These townhouses have no front yards, but planters at the entrance are well-suited for residents who might prefer to just raise a few flowers than tend to an entire lawn.

5- The courtyard leads out to the main vehicular street in the interior

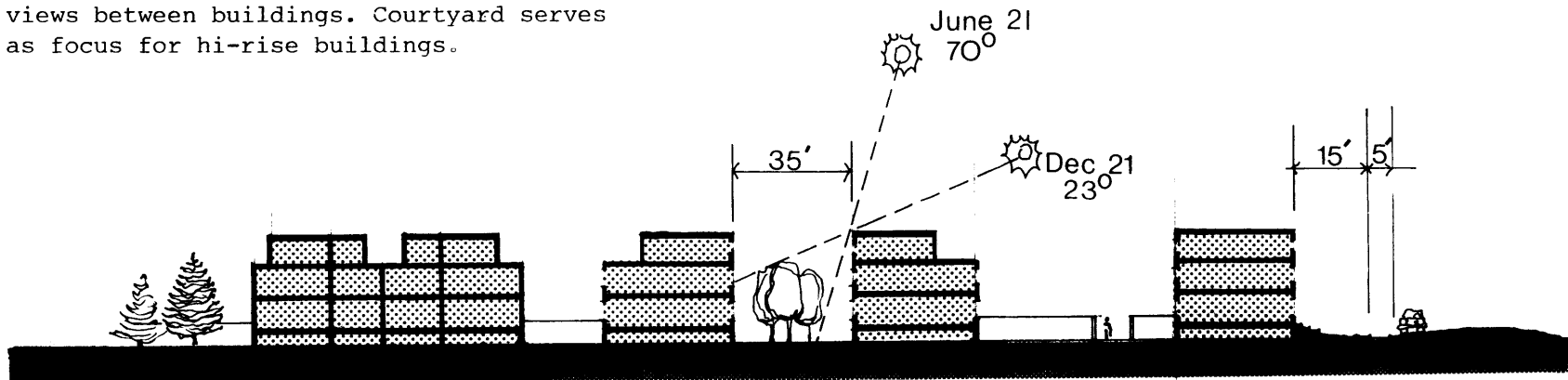




Pathway at
Court

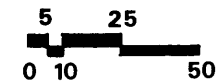


Section through townhouses, the new avenue, and the hi-rises showing relationship of hi-rise to townhouses. Trees buffer views between buildings. Courtyard serves as focus for hi-rise buildings.



Longitudinal section through townhouse blocks showing sun access at court and backyard zones.

Site Sections



of the site. The street is oriented along the direction of the hi -rises and the houses facing onto it are staggered in order to accommodate this direction. The center of the street is an elongated and treed earthmound that serves two purposes. One, the trees and the earthmound enhance the view of the units facing the street. Rather than looking squarely onto the face of a seven story building, the foreground is made green and buffers the potential harshness of the view. Two, the strip is reminiscent of the many tree -lined streets in Boston, such as Worcester Square, with a narrow entry and wide interior green plaza. Some parking is provided along this artery but most importantly the street ends at a large paved plaza and aligns itself with the stairs leading to the landscaped deck of the Southwest Corridor.

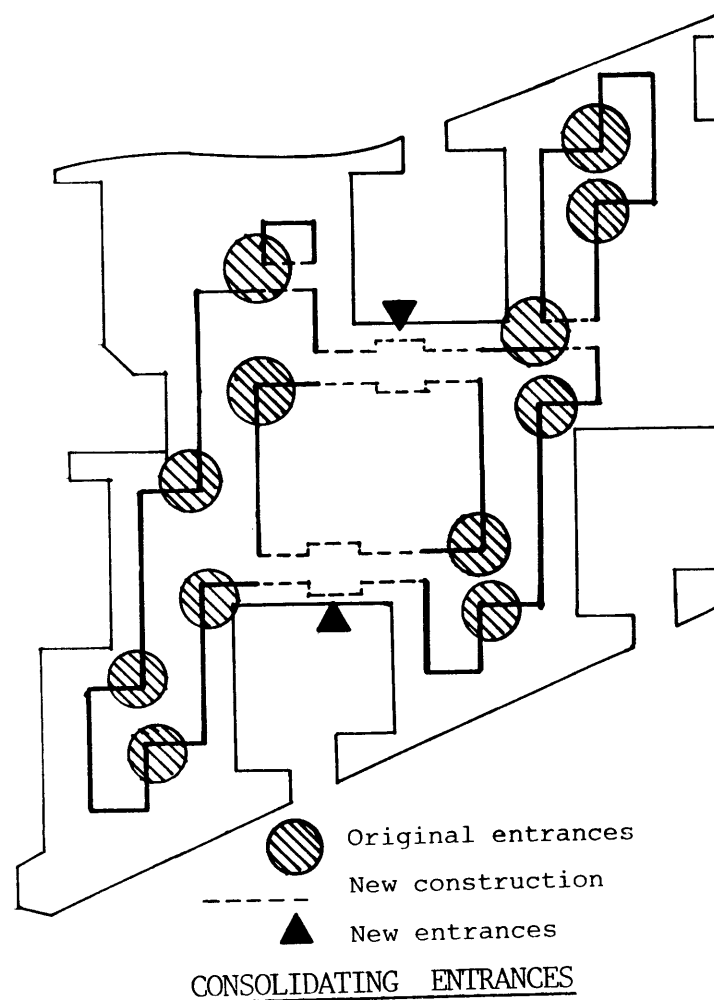
6- The plaza is associated with the mail room, the day care center, and

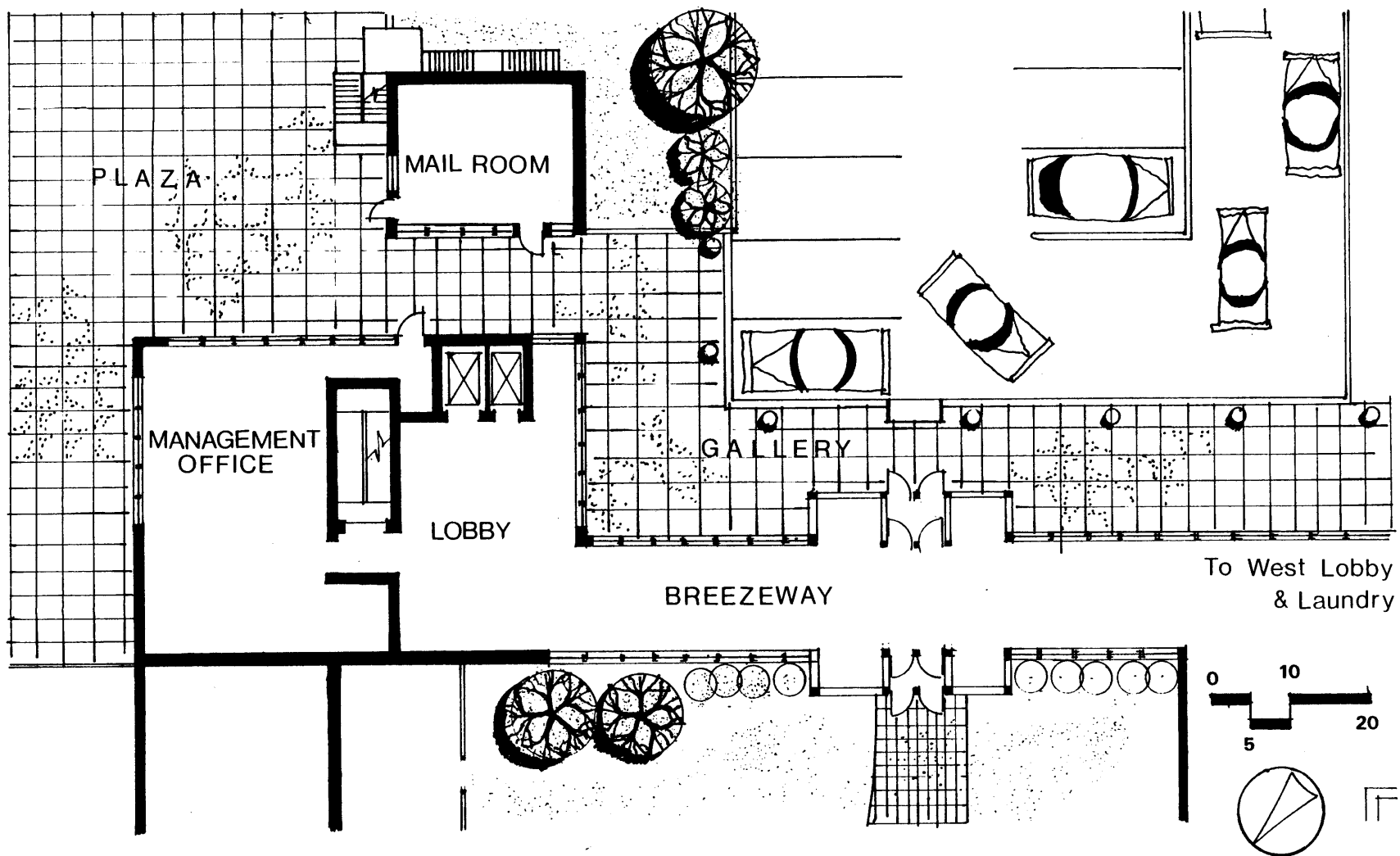
the management office. Since it is not adjacent to the residential entries to the hi -rise it is easily recognized as a public place. The large, paved, corner location is a prime teen hangout as well as a community meeting spot for flea markets, voter registration, and other community oriented activities.

7- The treatment of the hi -rises themselves was inspired by the objective to establish a community atmosphere about the hi -rises. Their proximity to one another allowed consolidating the original twelve entries into two main entries and defining the territory between as strictly under the influence of those tenants. Two entries are more secure than twelve especially with the aid of electronic monitoring devices and calling systems. Parking for the hi -rises are maintained in the original locations at either ends of the buildings.

The duplexes occupying the first two floors of the seven story buildings are provided with their own private entries and front and back yard spaces. These residents can park their cars in front of their units and pass through their fenced, private gardens to their front doors. Some of duplexes have backyards that are located in the courtyard formed by the enclosed breezeways at the main entrances. The backyards are fenced, and the common garden is landscaped and equipped to absorb the boisterous activities of small children playing or the silent relaxation of elderly residents.

The pathway cuts through the first floors of the hi-rises and creates a public gallery at this level. The window walls along this gallery allow two way surveillance opportunities between people occupying the mail room, management office, and





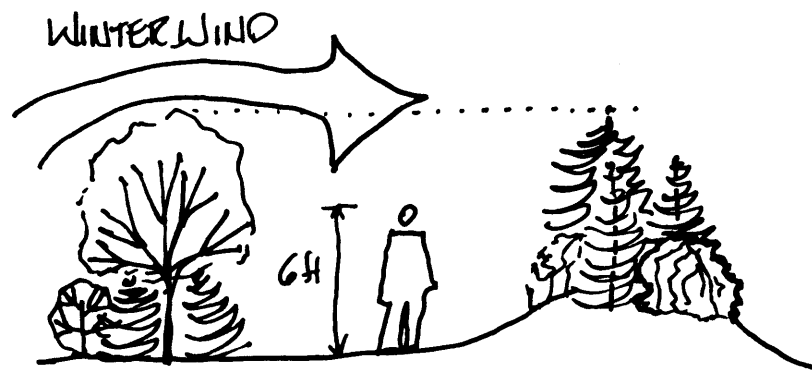
To West Lobby
& Laundry

Pathway at
Gallery

laundry room and people passing through the gallery.

8- The pathway continues past the hi-rises and is formally aligned with the entrance to the gym. Again it widens to become a place for hanging out. The old gym is replaced with a new recreational facility that houses community meeting rooms in addition to the basketball courts. Its new orientation is aligned with the prevailing summer breezes to allow for better ventilation during the warmer seasons. Opened doors at either end of the gym allow thru breezes and communication between teens congregated outside and the players inside. The grassy area before the entrance is a prime site for touch football since youths can be naturally observed by their peers circulating through this zone.

The long secondary walkways represents a boundary between the hi-rise block and the



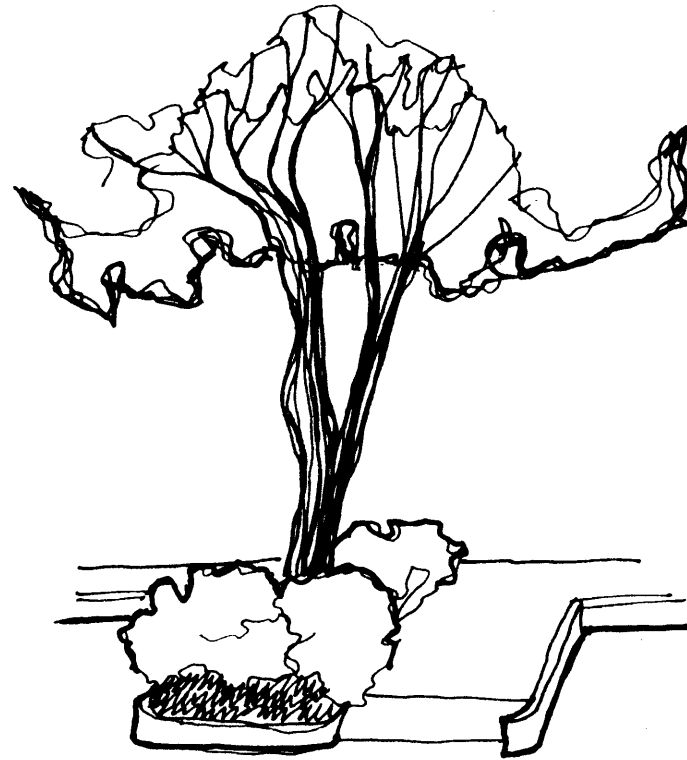
Earthmounds and shrubs or trees and shrubs to be used as wind barriers.

Reference: Site Improvement Handbook for Multi-family Housing.

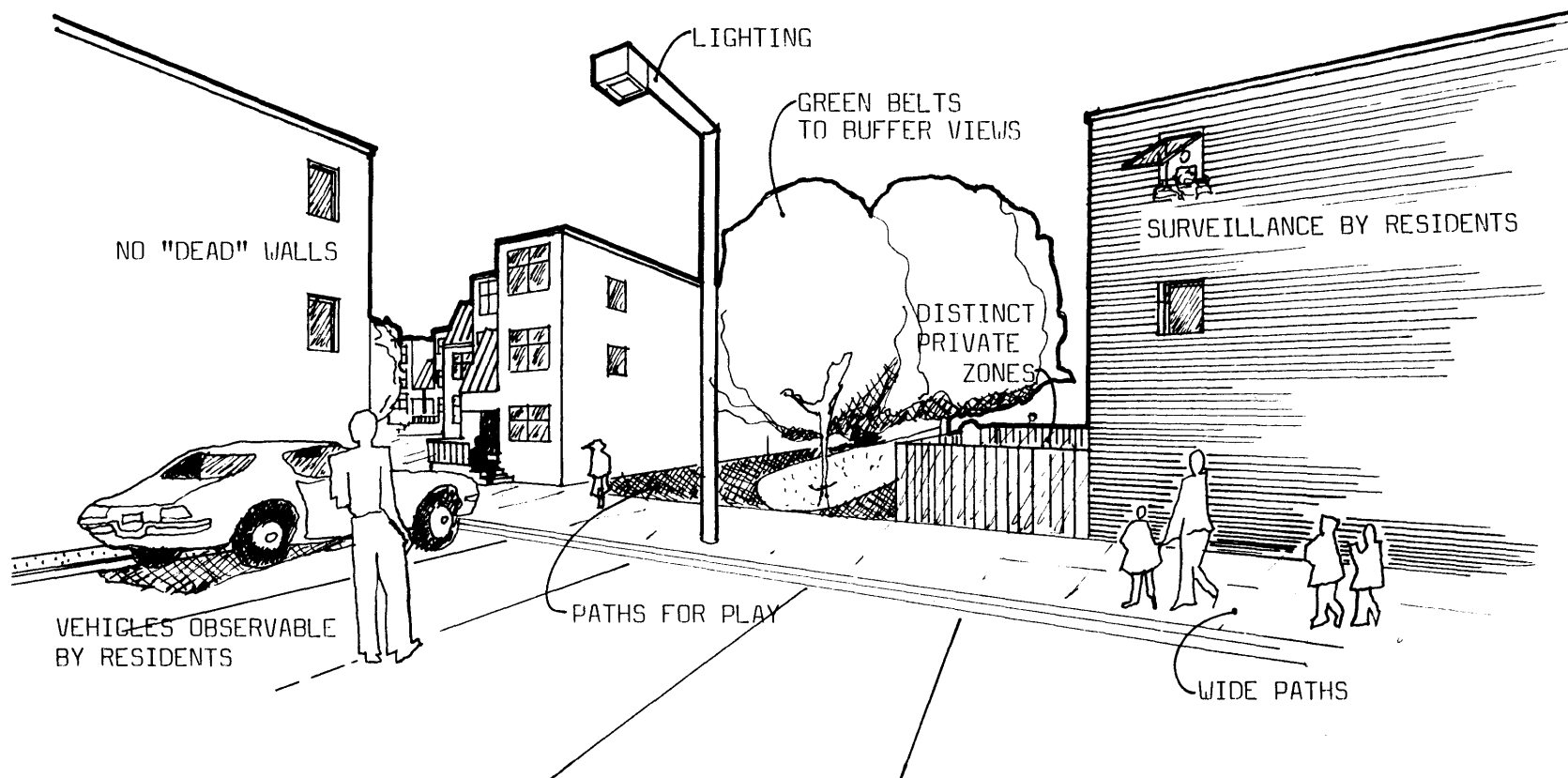
townhouse/recreation block. Several more townhouses are located along the southern edge of the site and have their own plaza from which their units are accessed.

Another large paved area is provided opposite the three story walk-up, and serves the playful activities of children as much as it acts as a collective focus for the three entries of the walk-up.

9- The sidewalk system of circulation accommodates many familiar uses. Inasmuch as children use the site much more than adults, the sidewalks are their playgrounds. The sidewalks are also important feeders to the main points on the site and off the site as well. Residents for Mission Hill Main will use them to get to the new Orange line station, the landscaped deck, and the gymnasium. Likewise, adults use them to take long walks with pets or friends.

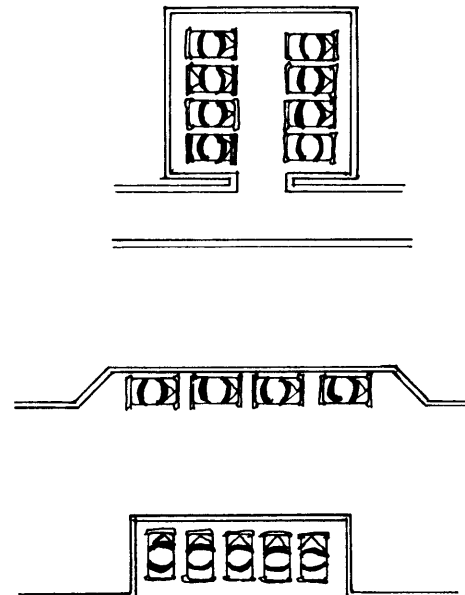


All sidewalks to be ramped at curb.
Reference: Site Improvement Handbook
for Multi-family Housing.



Surveillance Opportunities at Parking Lot

10- Parking lots are tucked away from traffic and organized to comfortably accommodate conversations over washed cars. The parking lot adjacent to the gym would especially be equipped with faucets to allow such socializing. Parking space for the townhouses are provided at a ratio of 0.5 spaces per unit, while the ratio for the hi-rises is 0.4 spaces per unit. These ratios are designated in the Mission Hill Extension Developer's kit. The parking lots at Ruggles Street and the new avenue are located between the sidewalls of two townhouses each, but windows in these walls make them much more personable spaces and alleviates the potential anonymity of parking lots. Visual and verbal communication is made possible so the parking lot is safer and more intimate.



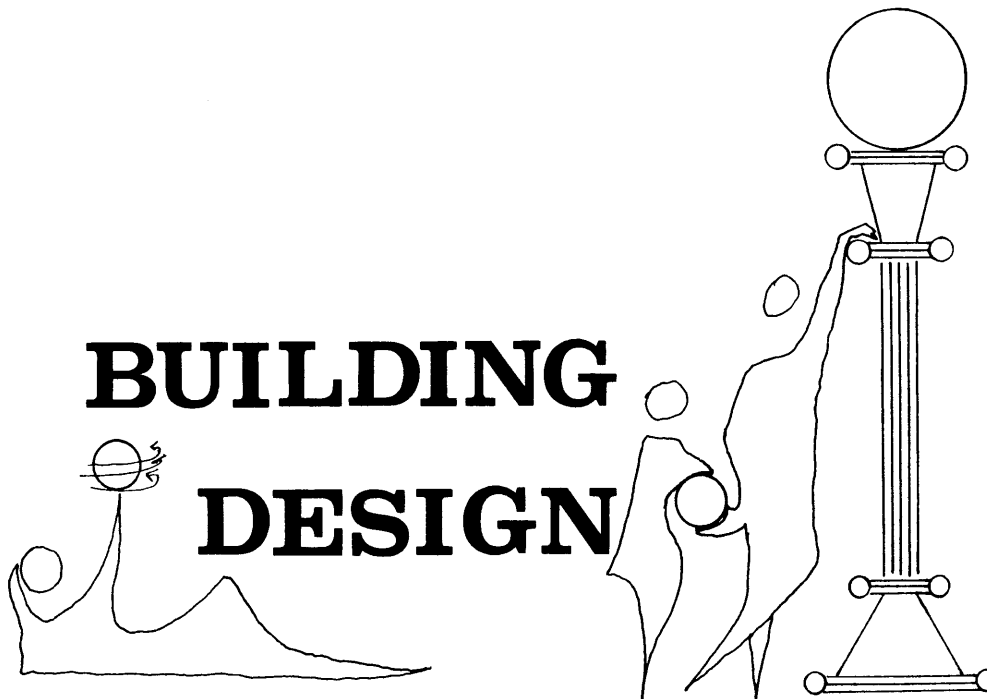
Parking situations that occur on the site.
Reference: Site Planning,
Kevin Lynch.

Notes

1. Oscar Newman, Defensible Space
(New York, 1973), p.60.
2. Kevin Lynch, Site Planning
(Cambridge, 1971), p.308.
3. Clare Cooper, Easter Hill Village
(New York, 1975) p.xvi.
4. Newman, p.80.

CHAPTER 6

BUILDING DESIGN



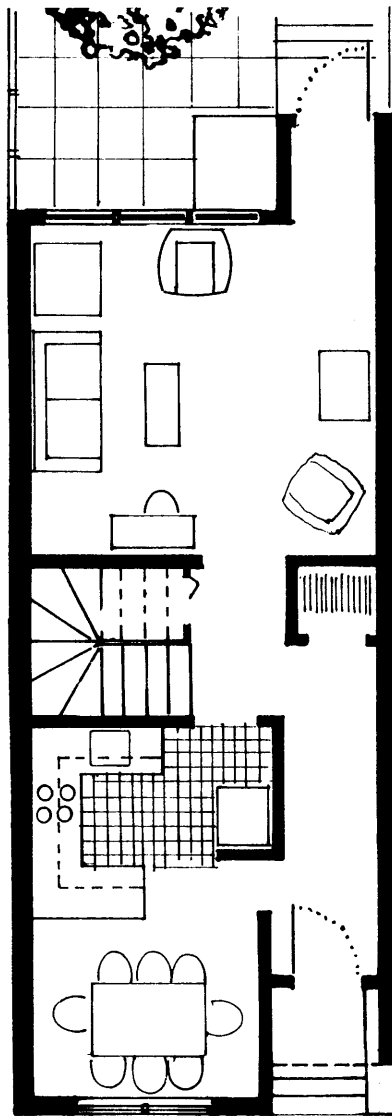
Consideration of the relationship between the individual and the dwelling is also important to the building design. Architectural features should address the three functions of the house: an indicator of status and rank; an indicator of protected zones; and a vehicle for human expression.

Six design considerations affecting the image of the townhouse and three for the hi-rises have previously been identified. The affordable tools and techniques for manipulating these six items have been listed, but particular regard is given to a technique called value perception. Value perception is a method used by developers which assigns priority to the tools --the architectural features --which are significant to a particular group and which heighten the value this group places on a housing development. Value perception

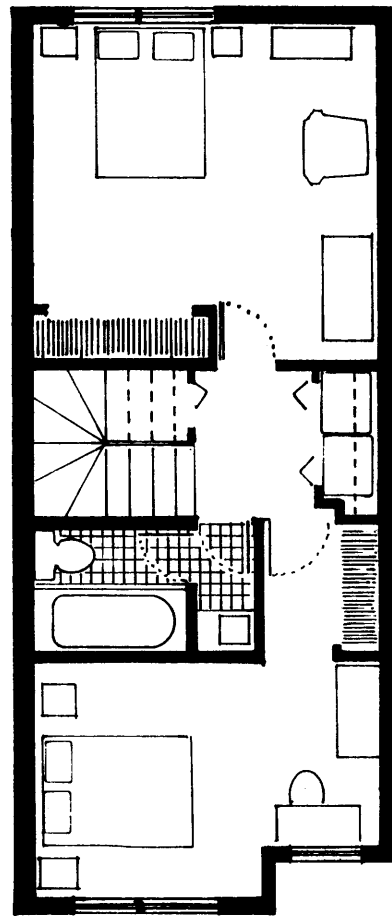
is especially important to image since it prescribes that the design be based on the values of the users, who in this case, are low income tenants.

Three basic plans for the townhouses have been generated. The unit mix chart indicates that 73% of the townhouses are three bedroom units; the remaining townhouses are four and five bedroom units.

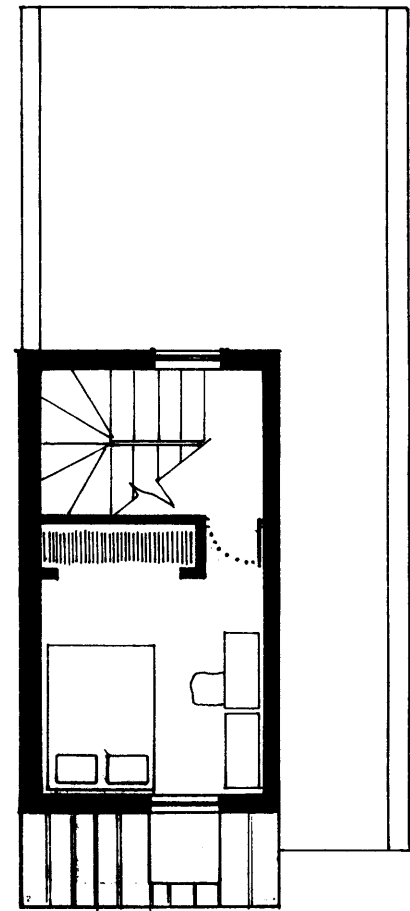
<u>Unit Mix Breakdown</u>		
<u>% of Total</u>	<u>No. of Bedrooms</u>	<u>Square Footage</u>
73%	3BR	1000
17%	4BR	1250
10%	5BR	1400



1st FL



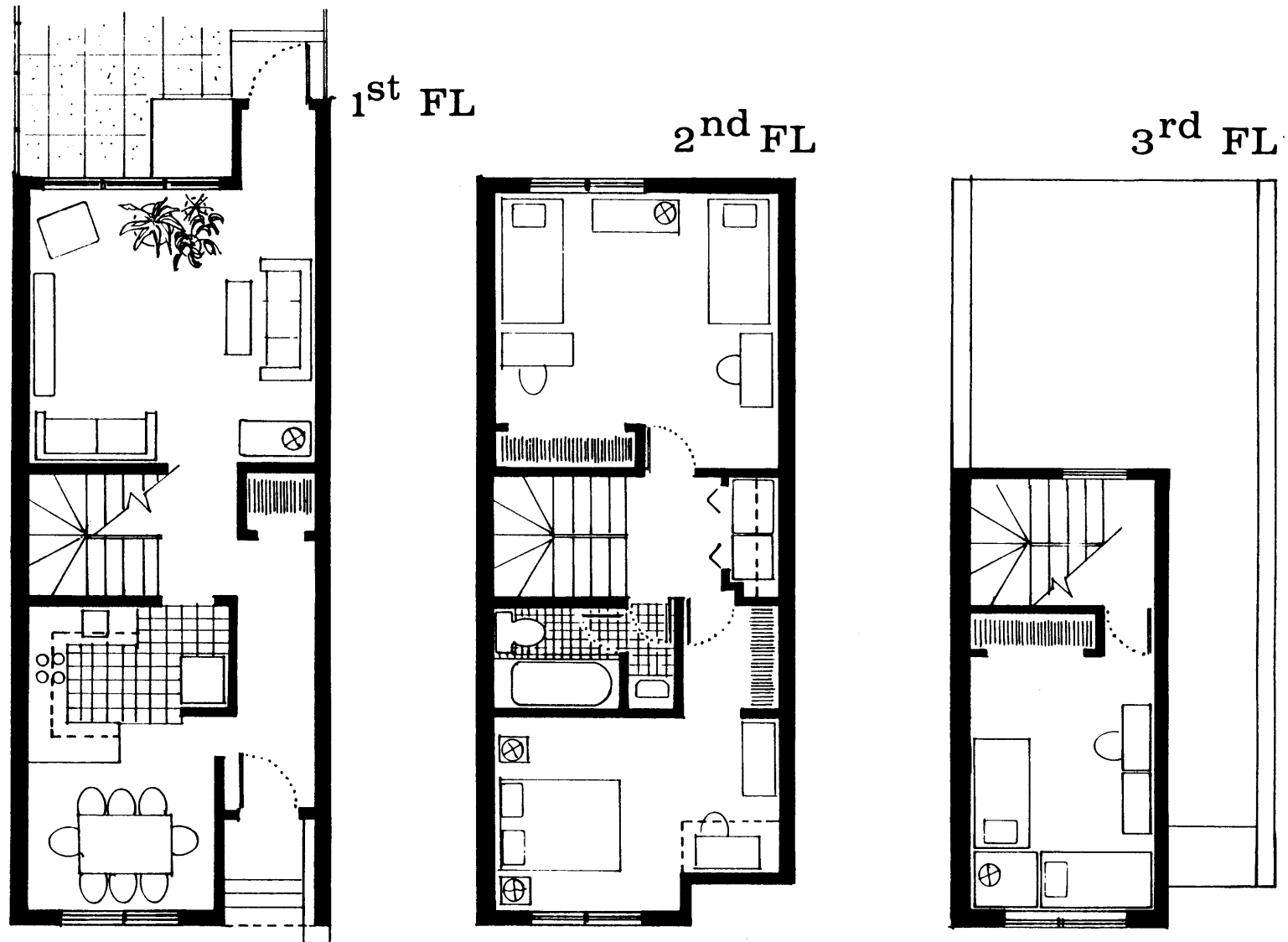
2nd FL



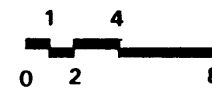
3rd FL

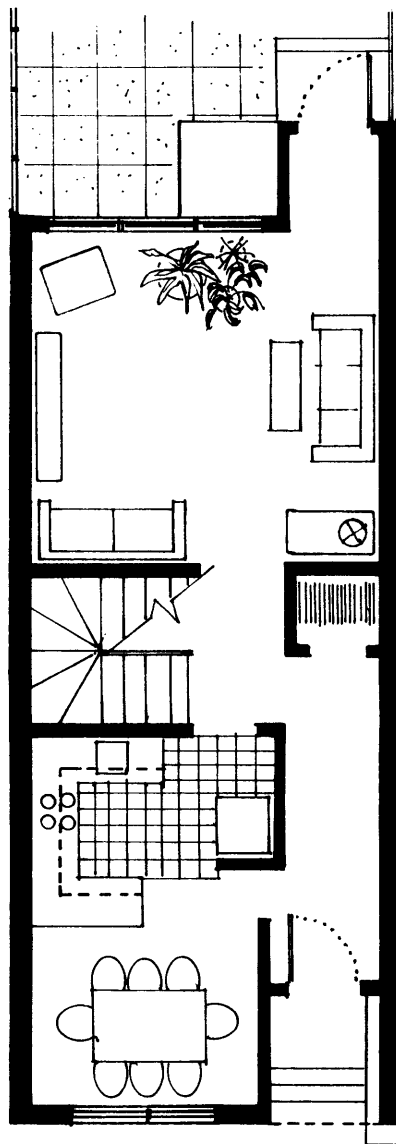
3 Bedroom Unit



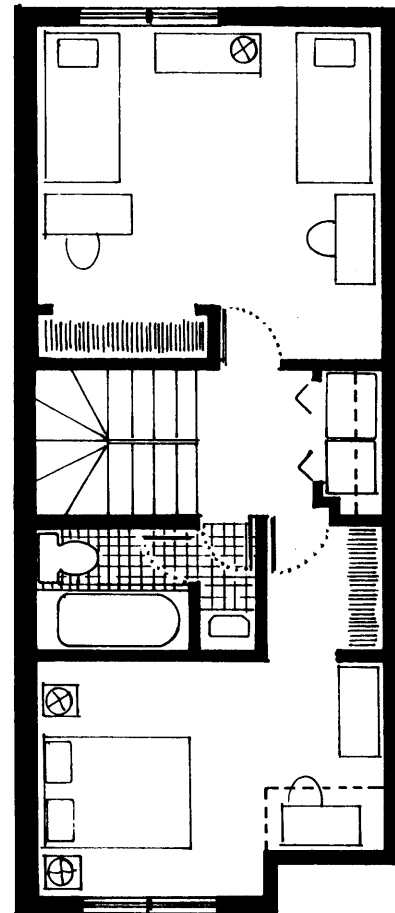


Alternative 3 Bedroom Unit

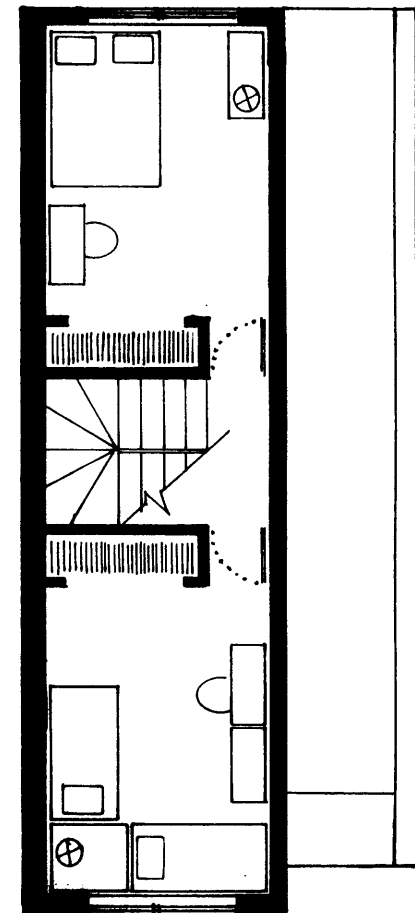




1st FL

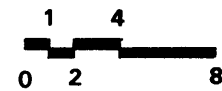


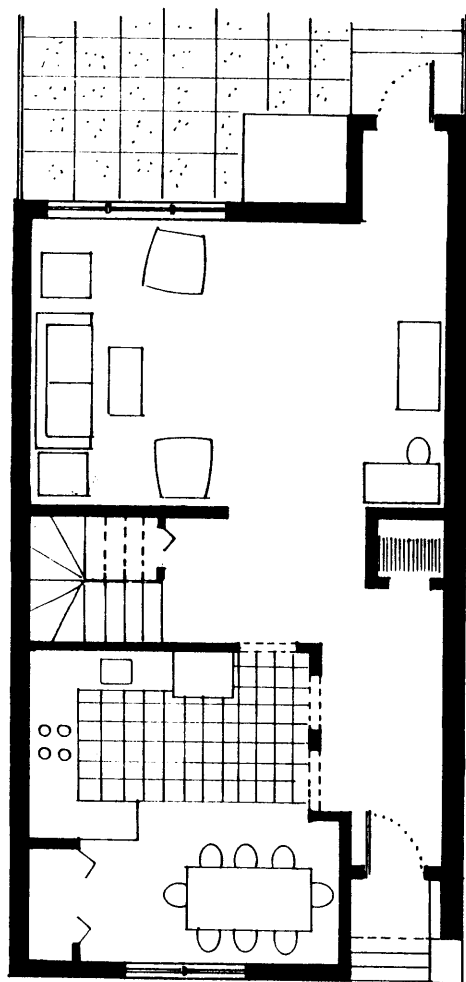
2nd FL



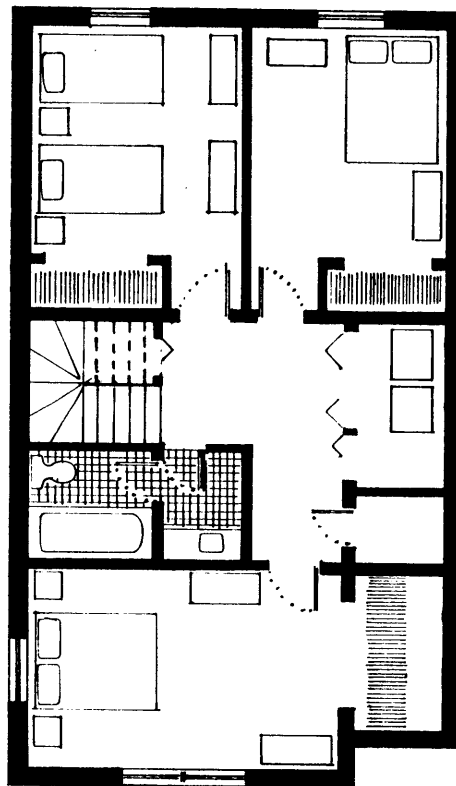
3rd FL

4 Bedroom Unit

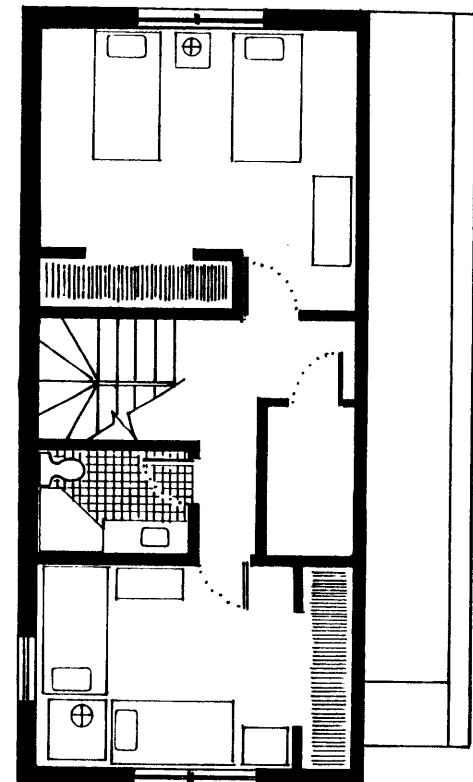




1st FL

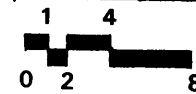


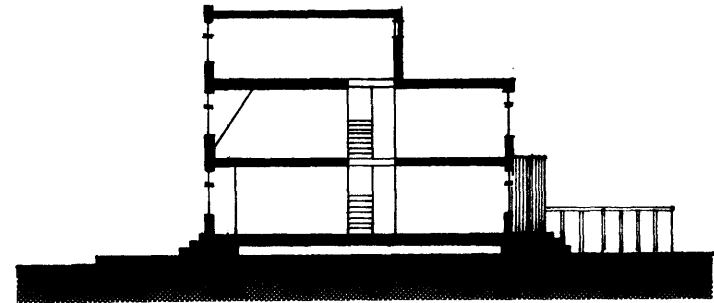
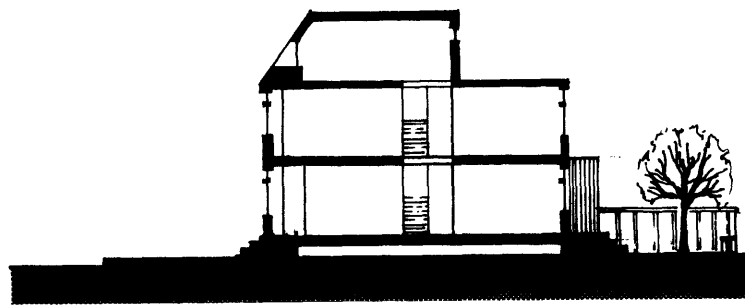
2nd FL



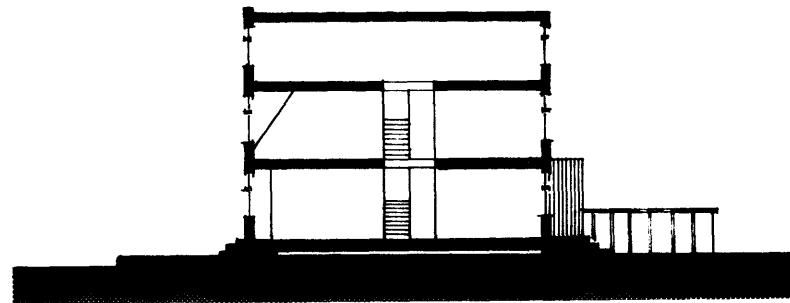
3rd FL

5 Bedroom Unit

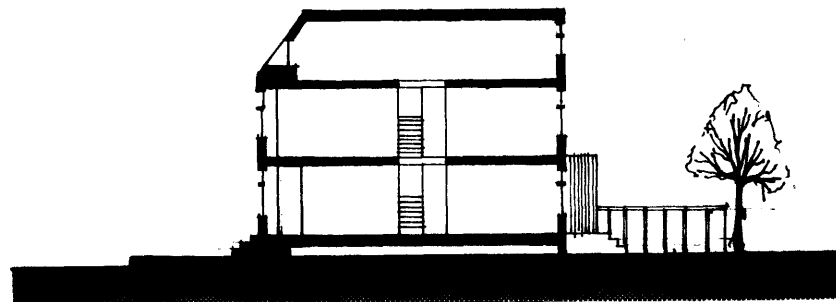




3 BEDROOM UNITS

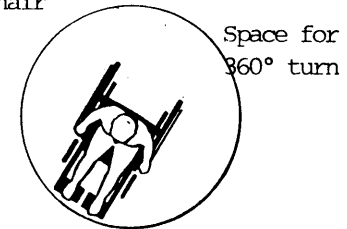
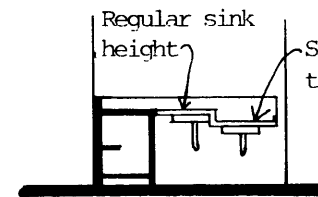
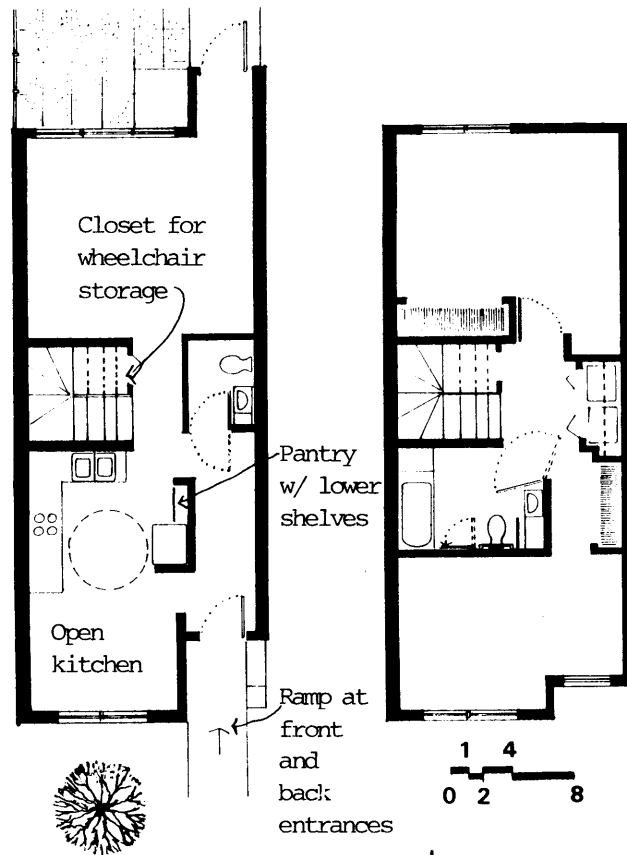


4 BEDROOM UNIT

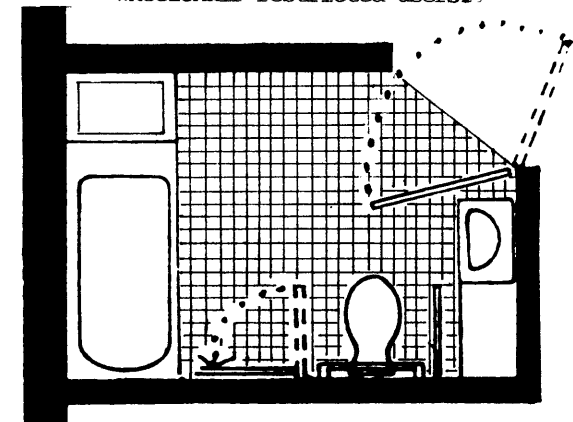


5 BEDROOM UNIT

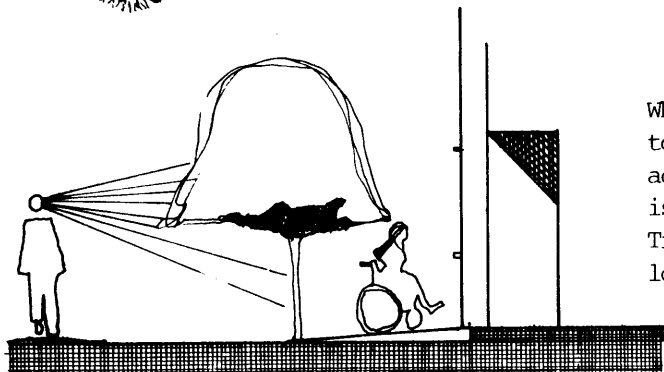
Unit
Sections



Kitchen areas equipped with pantries and double height sinks for use by able-bodied residents and wheelchair restricted users.



Bathrooms in wheelchair accessible units have larger clear floor areas. Water closets are accessible from front and side.



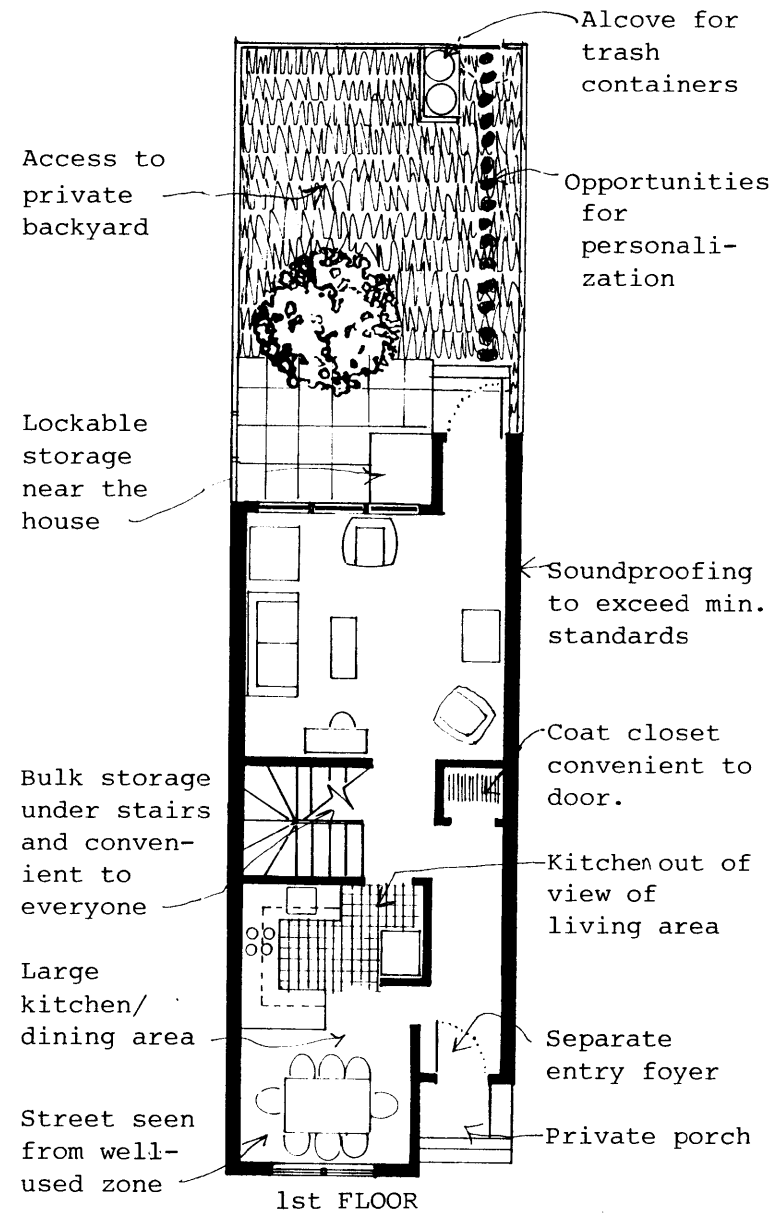
Wheelchair units are lower to grade for easier access. Maximum ramp slope is 1:12 (ANSI Code). Tree provides privacy for low front windows.

Unit Plans for Wheelchair Accessibility

The Townhouses

VALUE PERCEPTION IN SPATIAL ORGANIZATION

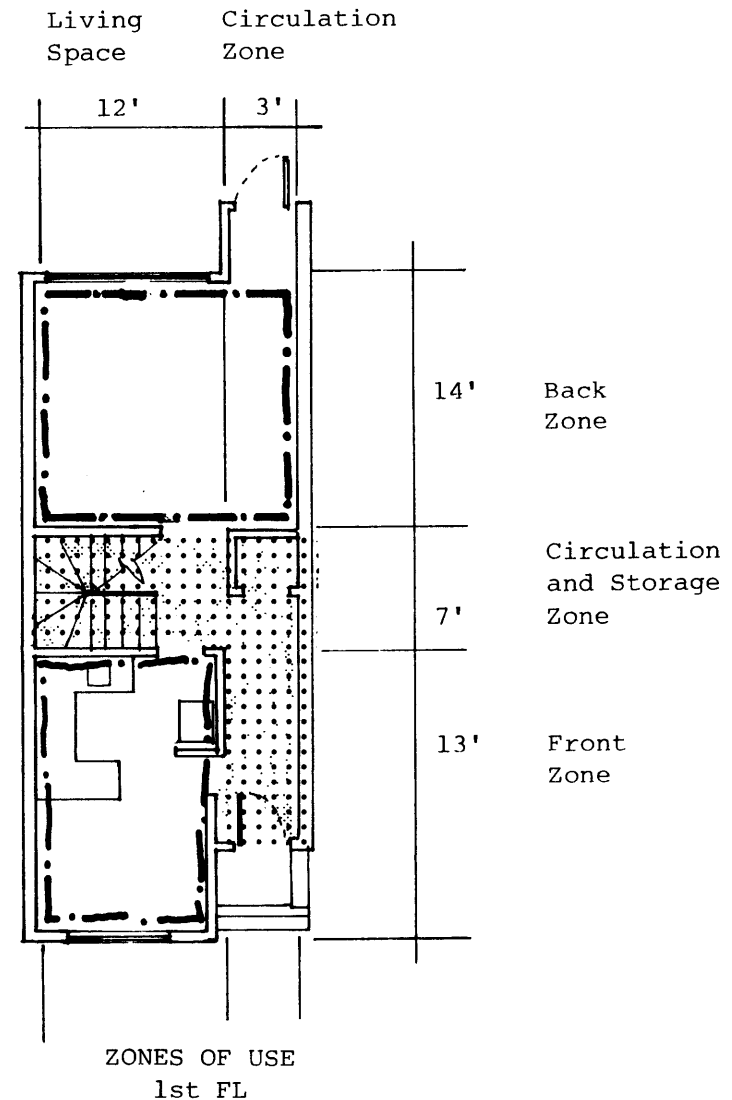
The perceived value rule says that "if a feature creates more perceived value than it costs to build, use it!" An analogous though not so gallant attitude follows the townhouse design. The design features that are valued by the residents and still allow inexpensive to moderate construction costs are included in the design. Four design considerations specifically concern value perception in the design of spaces. They are: (1) Adequate sizing of spaces; (2) Separation of public and private zones; (3) Personalization; and (4) Visual and acoustical privacy. These represent the priorities for designing the townhouses.



A system of interior zoning aids the organization of spaces in the townhouses. Typical use zones such as storage, living, and circulation are given a range of acceptable dimensions. The actual dimensions used are based on criteria from HUD's Minimum Property Standards and specific comments residents reported about the size of rooms.²

The interior spaces have been organized into two living zones at the front and back. Vertical circulation is in the center and separates the two main zones. Opportunities for storage occur within the L-shaped circulation zone. Back and front yards are also included as zones.

The kitchen and dining areas are at the front of the house. Frequent complaints are about the kitchen. It needs to be bigger since families congregate there. So, to achieve a more spacious zone, the kitchen and dining areas are combined. The

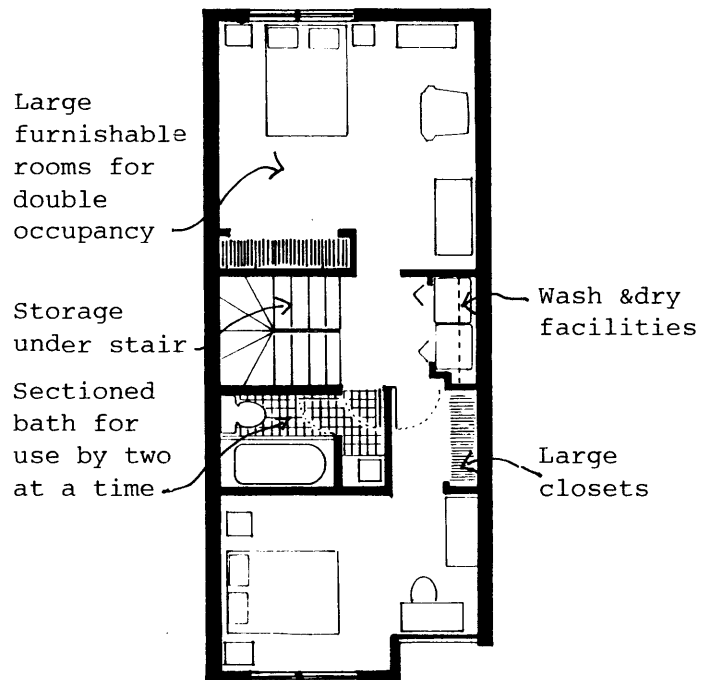


countertop and cabinet space between them provides some definition for the two areas. The front location allows surveillance of the street from intensely used zones and gets natural light into the kitchen.

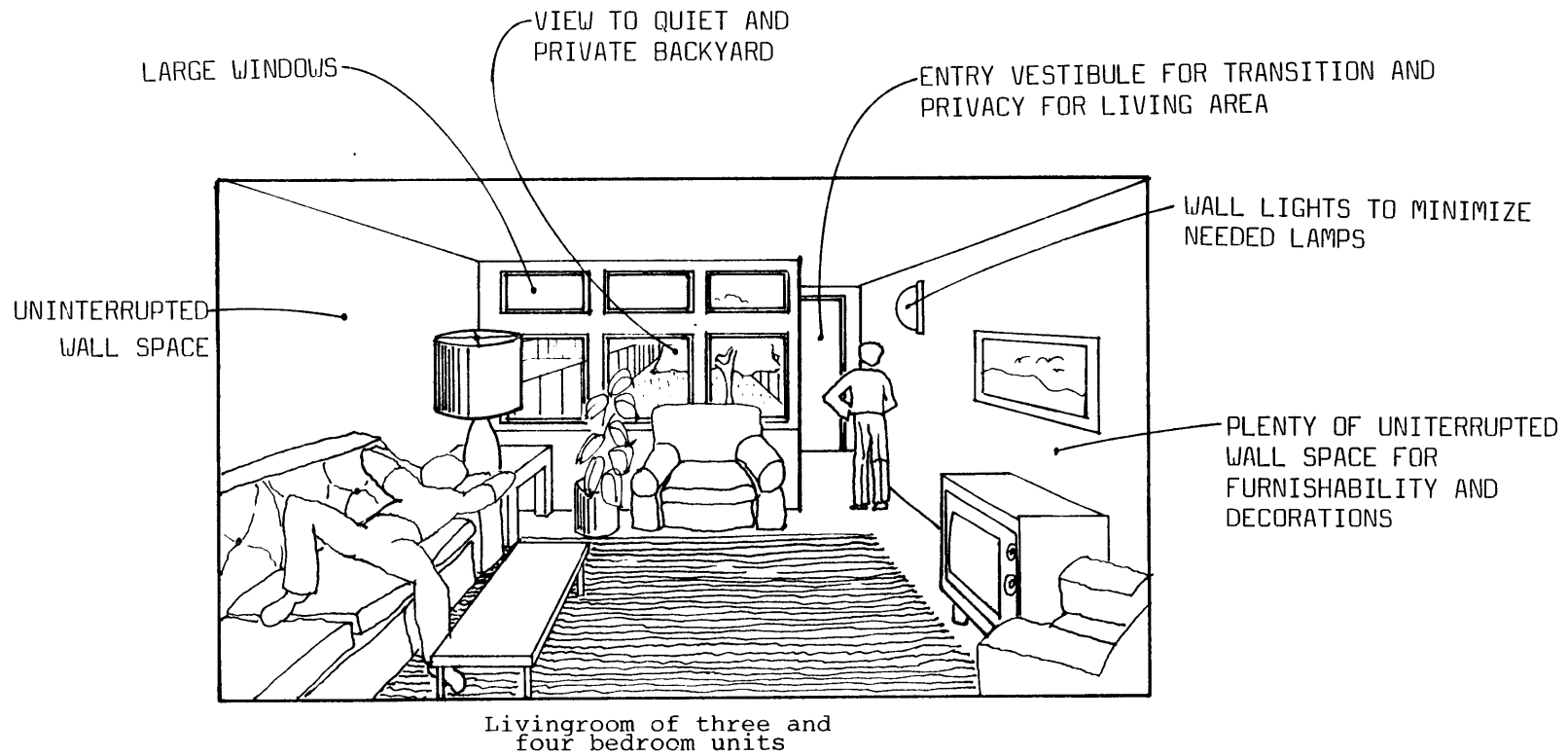
The living room is located at the back of the house. Residents wanted at least two separate living areas so that family members can pursue different activities without conflicts. The living space is free from major circulation paths which allows it to span the entire width of the unit for a more spacious appearance. A single window wall looks out into the backyard. The privacy afforded by this orientation is generally preferred by residents.

Bulk storage space is provided under the stairs on two floors for convenience and efficiency. Coat storage is provided in the entry hall and serves as additional enclosure for the living area.

Backyards are in most cases twenty five feet deep and large enough to accommodate a variety of uses. The paved area at the back door can be used for sitting, barbecuing, or temporary storage. Lockable storage is provided next to the house. Space is also provided for trash cans at the rear of the yard.



Value Perception-2ndFL

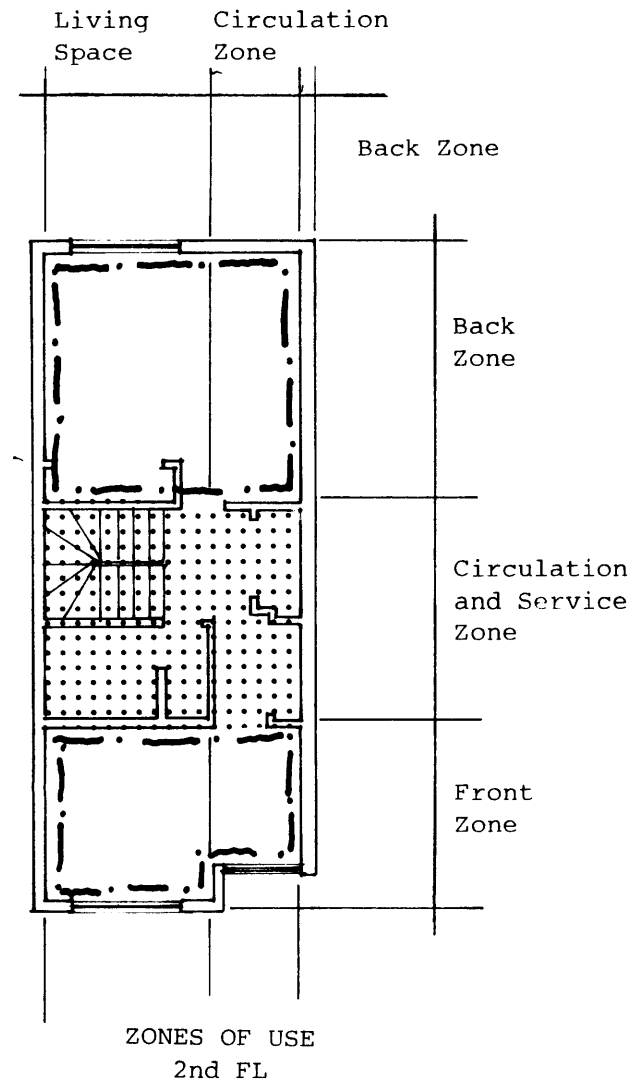


Quality of Livingroom Space

The same zoning system is used for the second and third floors of the units. Bedrooms occupy the front and back zones. The central zones is devoted to circulation, storage, and services. Concealable washer -dryer space is provided on the second floor where most of the laundry originates. The bathroom is divided into two zones to provide privacy for two simultaneous users.

Many devices distinguish public zones from private zones. An indentation sets off the front entrance and provides enclosure. A level change of three steps creates a private front porch and provides a place for the casual interaction of adults who frequently meet in spaces adjacent to the unit.²

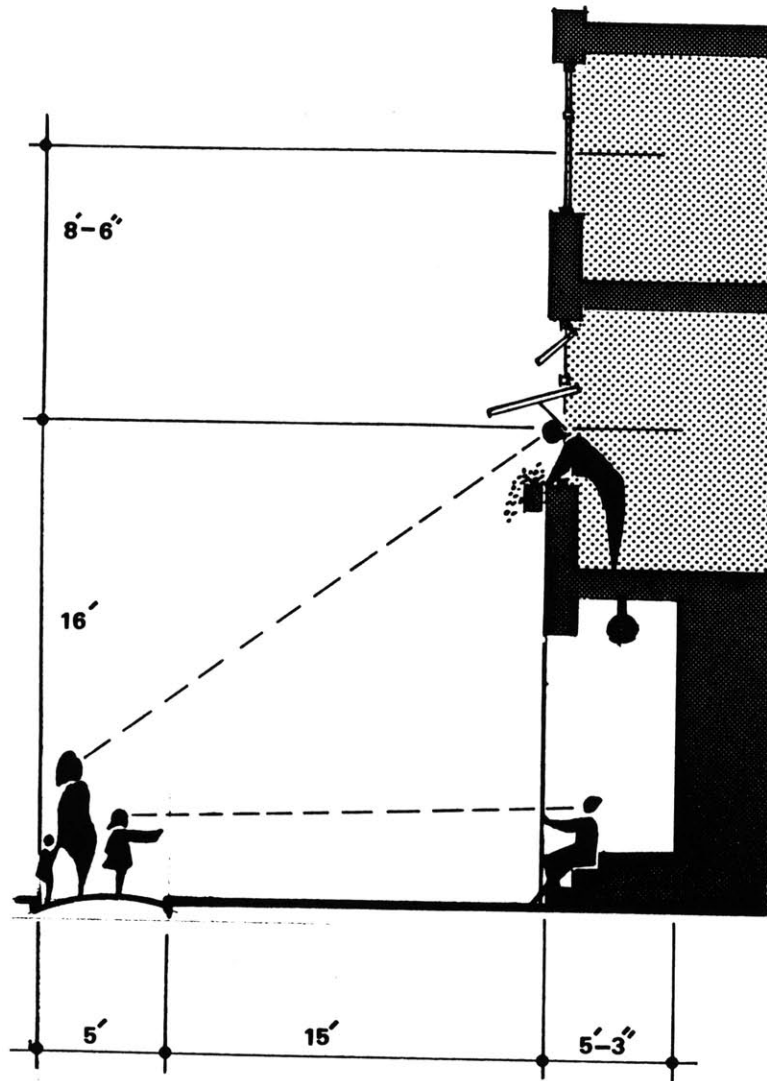
A separate foyer accommodates visitors without invading the privacy of other occupants. A similar foyer is provided at the back of the house as a transition from the backyard to



the living room.

Privacy can also be expressed in terms of the proximity of a public space to a private space. The frontyards are dimensioned so that privacy is afforded in the front rooms by the distance between the house and the public sidewalk. For houses facing streets, the frontyards are fifteen feet long and the floor and window levels are elevated to insure visual comfort in the front rooms. For the court houses, the floor and window levels are greater.

Provision for personalization occur in several places. Not only are interior walls and windows available, but window shelves and window boxes for flowers are also provided. The frontyard, front porch, and backyards offer more opportunities for residents to personalize units.



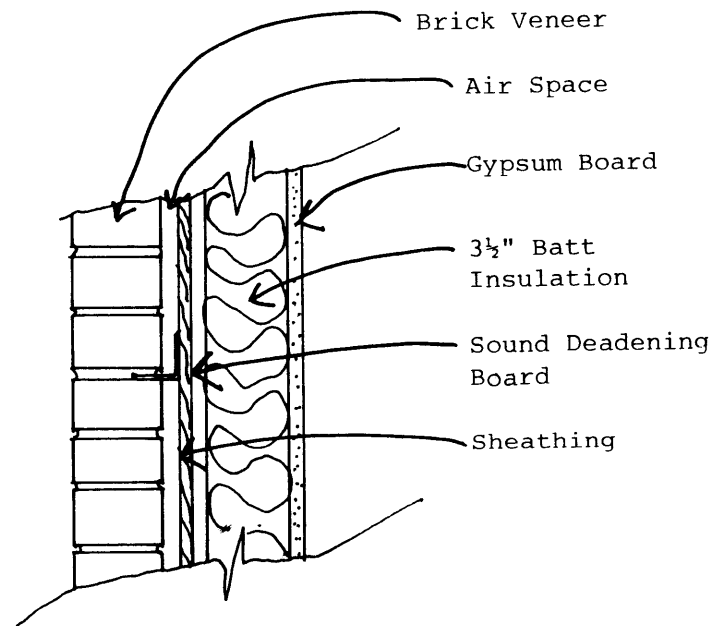
Dimensions of
Visual and Verbal Access
to Sidewalk from the
house.

Front porches are often the only places neighbors socialize with each other. The porch allows for privacy since it is set back into the building at the same time allowing for casual conversations through it's proximity to the sidewalk.

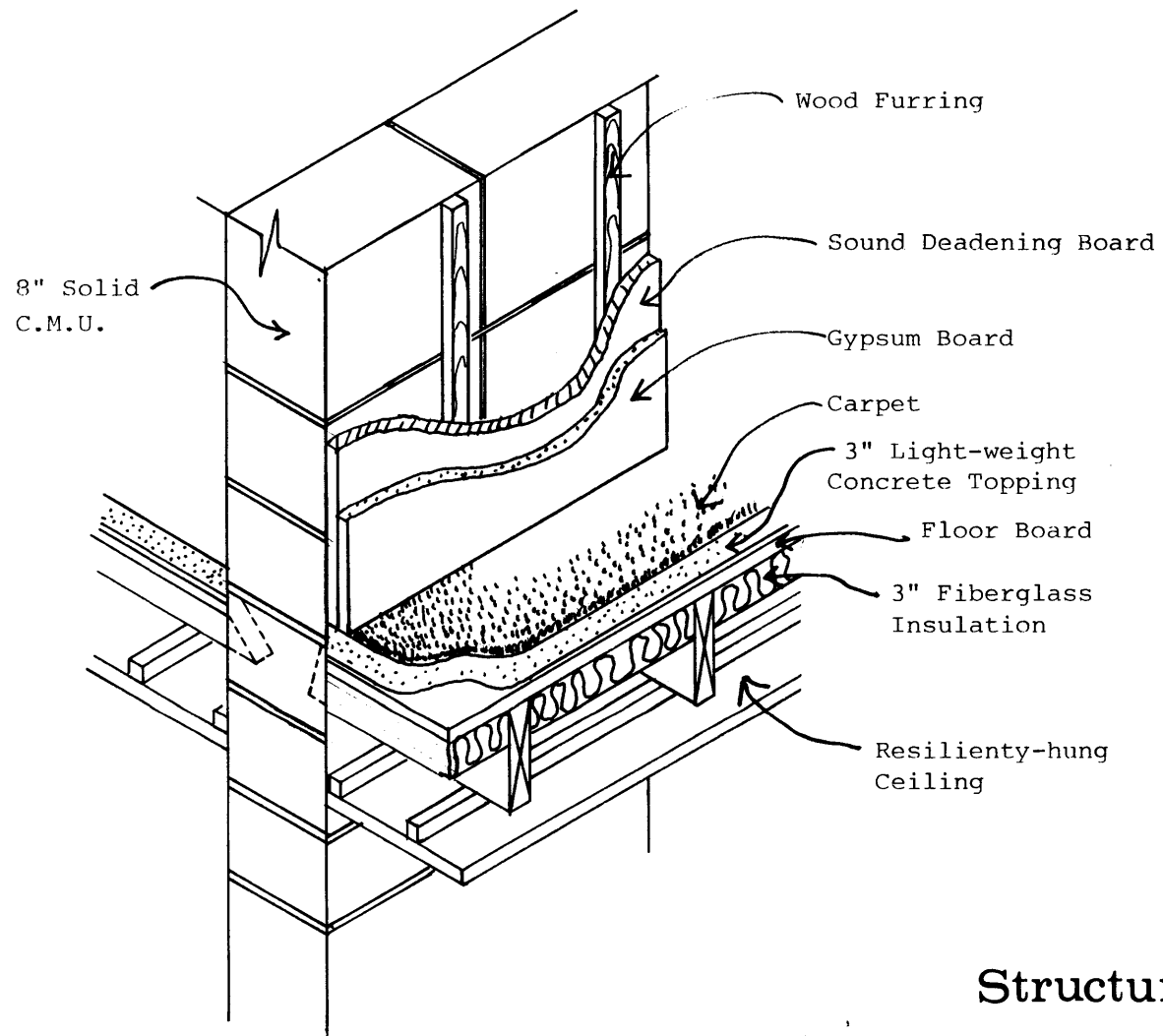
STRUCTURAL SYSTEM

The quality of construction has an enormous effect on value perception and the image the residents adopt of this development. Acoustical privacy and climate control are closely associated with construction details.

Acoustical privacy between dwelling units and from floor to floor within the unit is accomplished in two ways: heavy massive walls or discontinuous construction.³ Standard construction methods only minimally obstruct the transmission of sound through partions and floors. In



FRONT WALL
SECTION -
BRICK VENEER



Structural System

For Sound Isolation

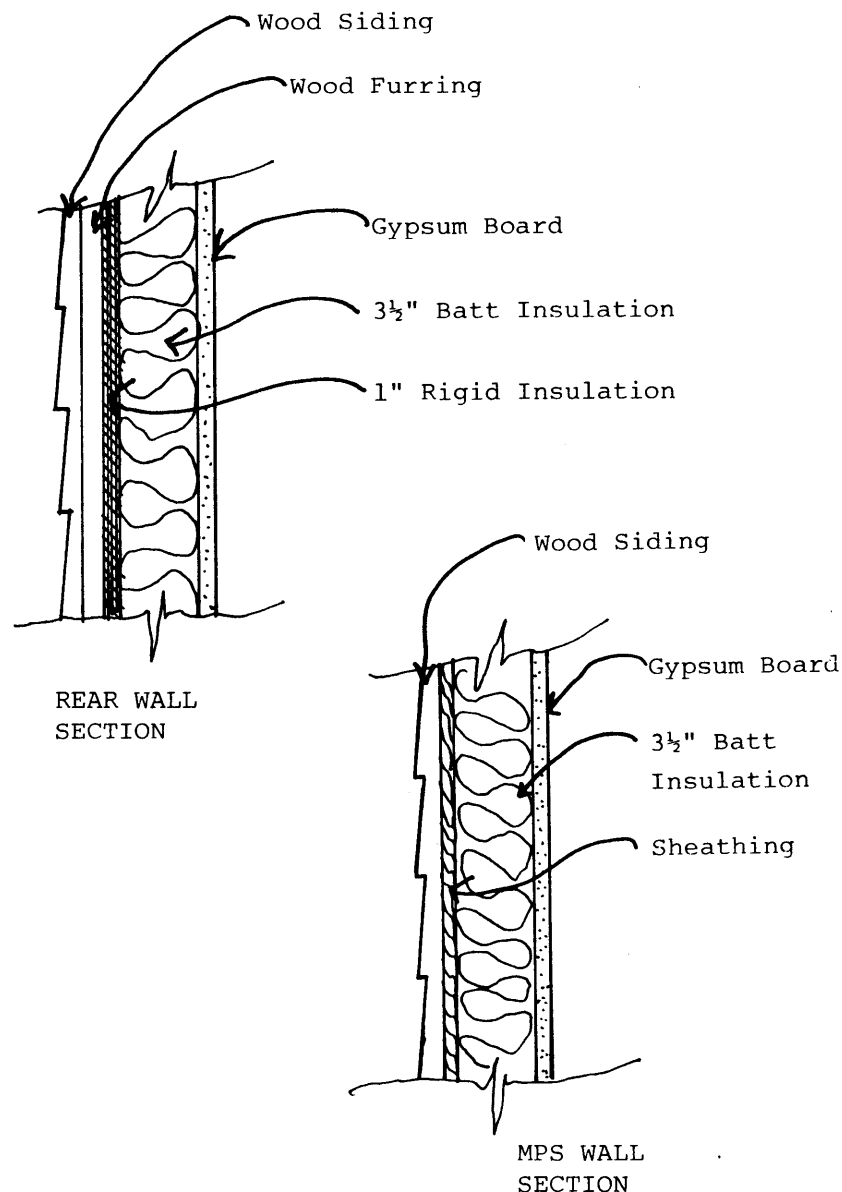
public housing where large families reside in such close proximity, maximum sound protection is necessary.

Adjacent townhouses are separated by a heavy masonry bearing wall with one layer each of gypsum board and sound deadening board attached to each side by metal furring.

The floor systems consist of a wood joist floor with a lightweight concrete topping, a resiliently suspended ceiling, and 3½" batt insulation between the joists. Many different constructions were available, but this one best combined fire protection, sound insulation, and low cost. (See Appendix)

Exterior walls are wood framed with 3½" batt insulation. In the case of the front facade, additional wood veneer and an air space complete the construction. Rear walls are faced with wood siding.

The same construction that enhances sound insulation also lends



Sound Transmission Class Values for Selected Building Constructions	
	<u>STC</u>
4½" solid brick, plastered both sides	46
7" stone-aggregate concrete 2x4 wood studs, ½" gypsum board both sides	55
3 5/8" sheet metal stud, ½" gypsum board both sides, 2½" insulation in air space	39
4" hollow concrete block wall with ½" gypsum board on resilient furring, one side only, 2½" insulation in air space	46
	51

MPS Sound Transmission Limitations		
<u>Between Partions</u>	<u>STC</u>	<u>IIC</u>
Living unit to living unit	45	
Living unit to public space	50	
<u>Between Floors</u>		
Living unit to living unit	45	45
Living units to public space	50	50
Within living unit	no minimum	

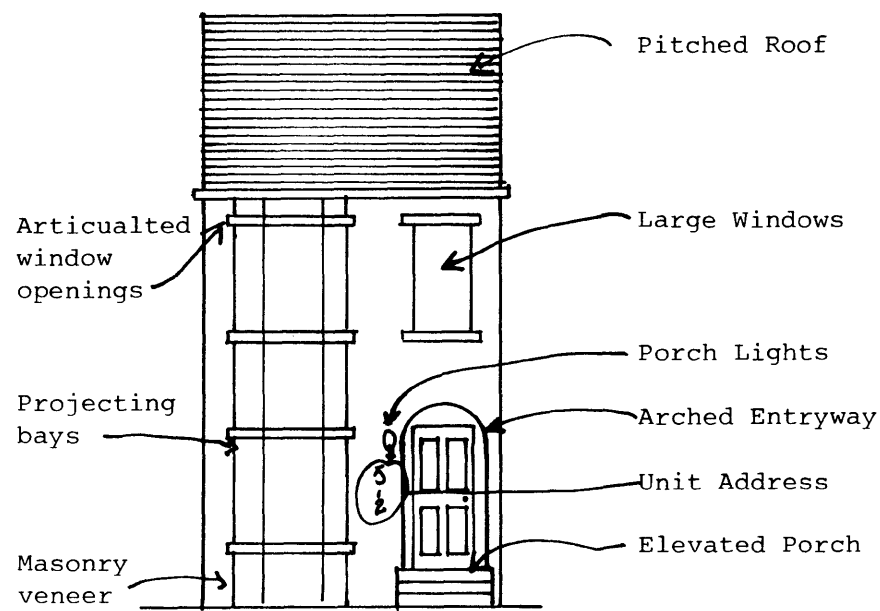
Impact Noise Ratings for Selected Floor/Ceiling Constructions		
	INR	IIC Impact Insulation Class (INR+51)
4½" reinforced concrete slab under 3/4" cement floor, ceiling suspended gypsum lath and plaster 1" thick.	-4	47
5" reinforced concrete slab under 2" concrete topping with linoleum covering, ceiling ½" plaster	+1	50
2x8 wood joists under 3/4" t and g boards, ceiling 3/8" gypsum board nailed to joists	-18	33
2x10 wood joists under plywood subfloor and underlay with carpet and foam rubber pad covering	+5	56

to an effective climate control system. Fiberglass batting is a standard insulating material as well as a good sound absorbing material. Likewise, the concrete topping contributes to the heat storing capacity of the structure. Although four inches of mass is preferable, for heat storage, the concrete topping is helpful in this capacity as it is insulating impact noises.

VALUE PERCEPTION IN FACADE DESIGN

Tenants have well-formed opinions about facade design. They value the things they see in private homes.⁴ Variations achieved by color and different heights are most frequently noticed.

It is possible to list the qualities of private homes that are recognized as residential features.

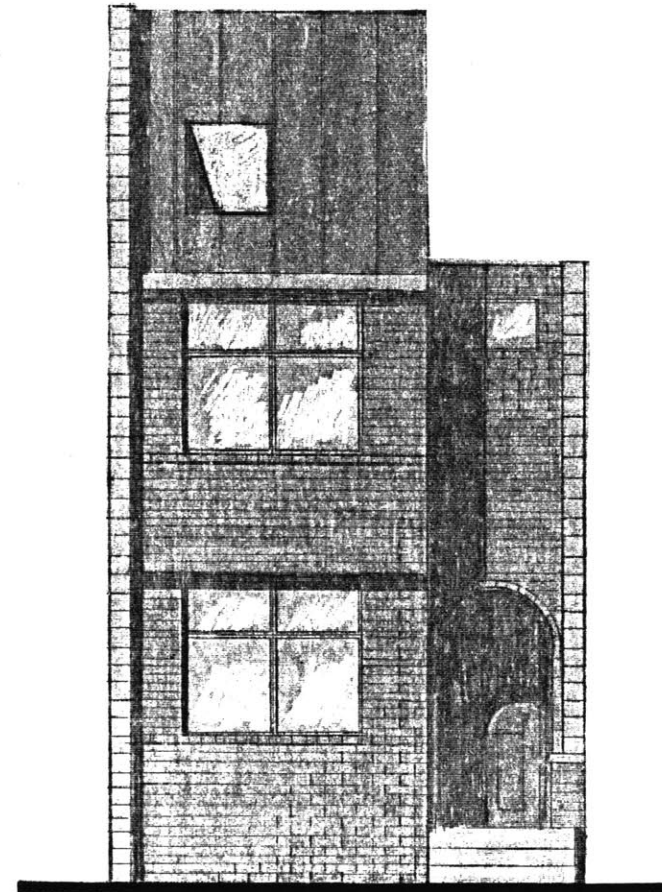


VALUE PERCEPTION IN FACADE
DESIGN

Among them are pitched roofs, large windows, raised entrances, masonry veneer, and sometimes projecting bays and articulated window opening.

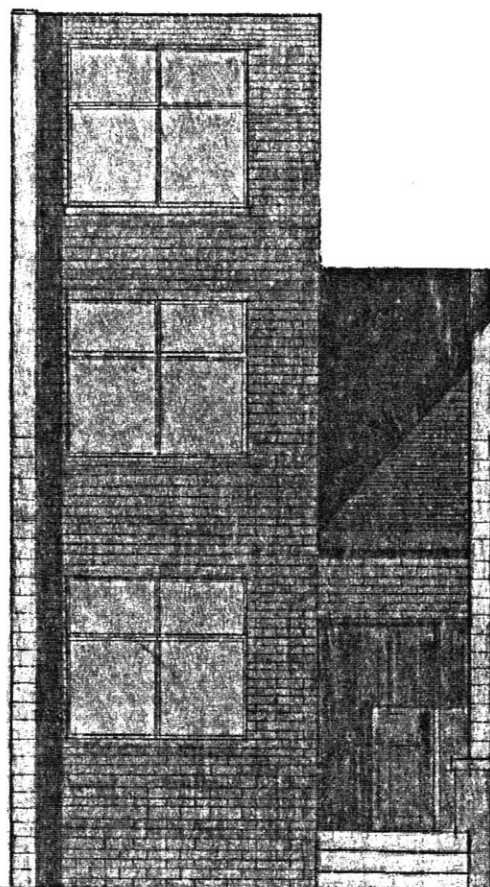
Housing in Mission Hill is frequently accessed through arched entryways. Bay windows are common features of the triple deckers. Porch lights and unit addresses are prestige items that add to the individuality of units without significantly adding to cost.

Three different facades are created for each the three, four, and five bedroom units. They are composed of a masonry veneer with standard window openings for outward projecting type windows. The pitched roof provides a sense of residential scale. Slight projections in the walls of three and five bedroom units are reminders of the bays of the triple deckers. The arched entries are also borrowed from neighborhood forms.

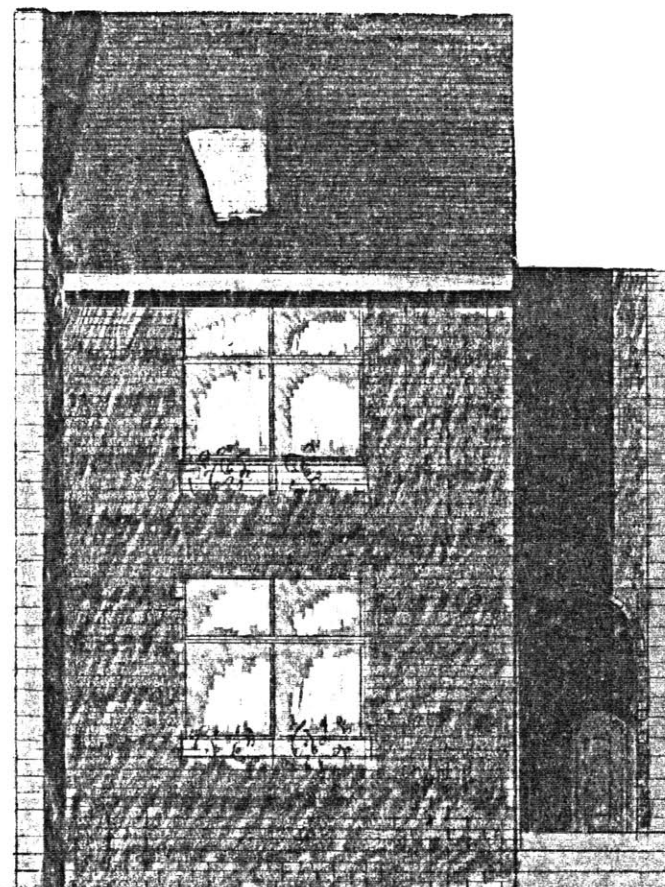


Three Bedroom Unit

PRELIMINARY FACADE DESIGN



Four Bedroom Unit

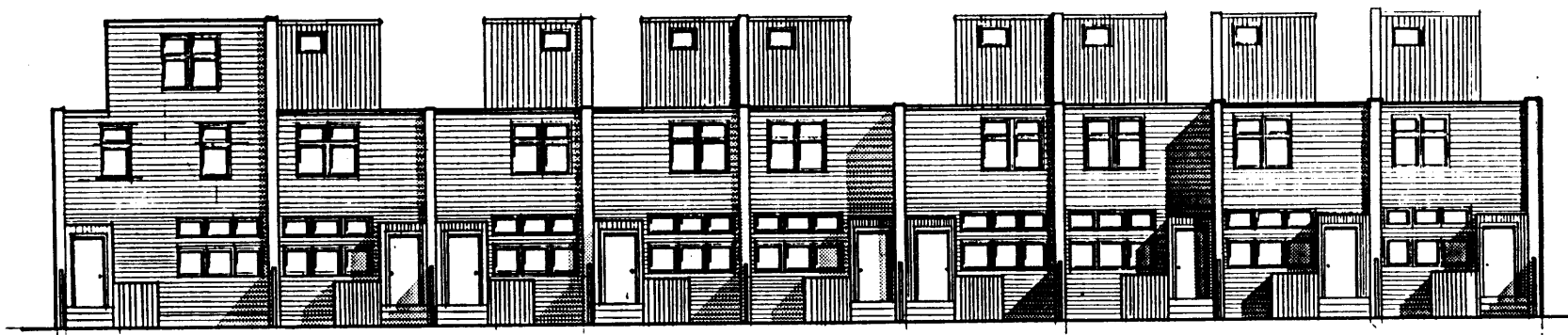


Five Bedroom Unit

PRELIMINARY FACADE DESIGN



Townhouse
Elevation



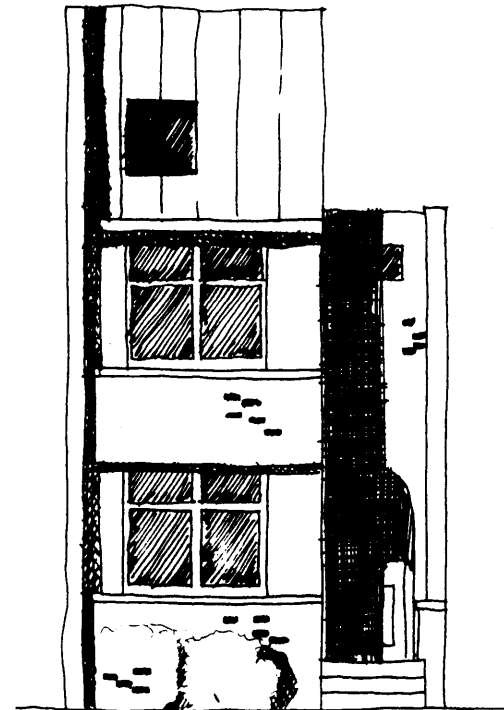
REAR ELEVATION
FOR TOWNHOUSES

To achieve differentiation in the units, several methods have been used: building set backs, variety in roof heights, different color doors, and the provision of plant boxes where desired. Only two different window sizes are used; variety in their arrangement gives the impression that more are employed. To compose a single row of townhouses, the plans of the units are sometimes reversed to vary the position of the entry and to structure some sense of rhythm along the roofline.

The material used to create the facade are limited to glass, red brick, and the roof. Rather than diversifying materials which would add to cost and maintenance requirements, shadows are created by set backs and enclosures to help add drama to the facades.

Masonry is chosen as the main facade material because it is an accepted residential element and

because it requires virtually no maintenance. The durability and versatility of brick is appropriate to the vernacular of Mission Hill, and as previously mentioned, deference to the vernacular of urban form is the key to gaining a positive image for this development.



The Three Bedroom Unit

because it requires virtually no maintenance. The durability and versatility of brick is appropriate to the vernacular of Mission Hill, and as previously mentioned, deference to the vernacular of urban form is the key to gaining a positive image for this development.

Costs vs. Benefits

Although cost calculations are beyond the scope of this thesis, it is apparent that these brick homes would cost more than clapboard units. These units are more durable and attractive than plain wooden structures, therefore, residents can be proud to live here and more inspired to maintain and protect the property. The extra initial outlay is more than justified by the savings in upkeep and the rehabilitation that wooden structures require after years of intense use, weathering, minimal maintenance, and sometimes abuse.

However, the most important benefit of a desirable design is that it reinforces positive self-images for the residents. For the many low-income tenants who are struggling to improve their situations, it makes sense to spend money on homes that are positive reinforcements rather than spending money for negative reinforcements which is the national attitude today. Ideally, the long term benefits of this approach would be felt by the private sector as well as those tenants in public housing.

The Hi Rises

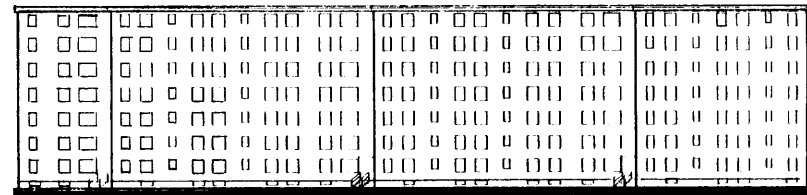
The appearance of the two seven story buildings in their present state are problematic for the image. For passersby and residents alike, they make profound impressions.

BEFORE

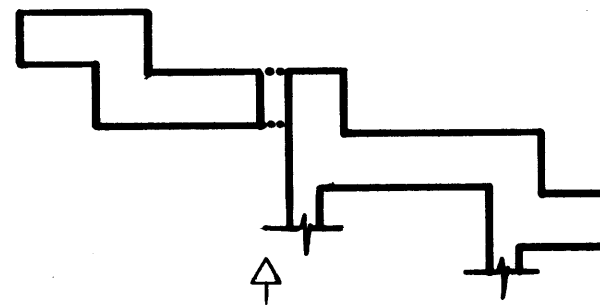
The site analysis pointed out that the buildings are monotone in appearance and ridden with vandalism. Their sitting does little to associate outdoor space with the building. The massing yields two extruded and anonymous forms, and the superabundance of entries creates an dangerous setting.

AFTER

To affect changes in the character of two masses, the buildings are coupled together by an enclosed breezeway. This linkage inspires a new residential quality by installing



Schematic Elevation of
Current Facade for the
Hi-rises

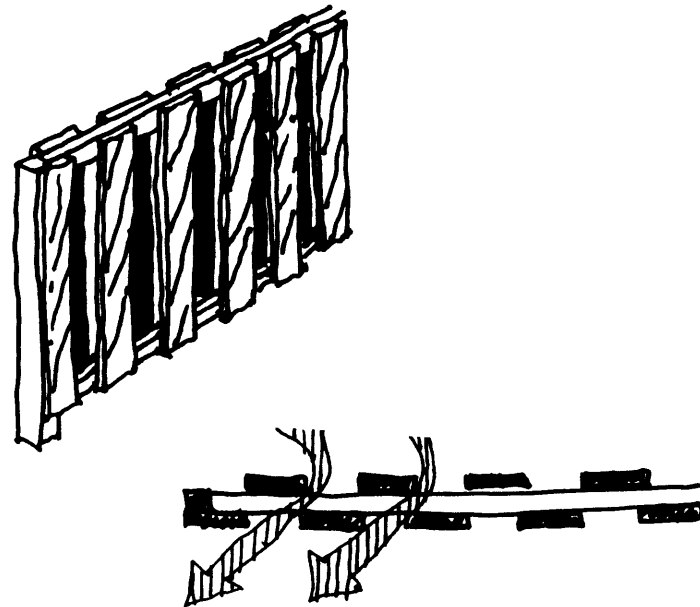


Hi-Rise
Elevation

human scale forms where before, the two buildings were just objects on the site. Aside from introducing variety in scale, this new addition makes it possible for residents to drive their cars up to the entrance with the opportunity to park only a few feet away. This concession is especially important for discharging passengers and unloading vehicles in inclement weather.

Public space that flows uninterrupted from bordering streets to the housing grounds are prone to high crime and vandalism rates.⁴ The provision of barriers and transitions help to define the territories associated with the hi-rise. From the street the parking lot and the plantings around it serve to inform non-residents that they are now within the domain of the hi-rises. The second entrances prohibit access to the buildings by anyone other than a resident or welcomed visitor.

Wood fences of alternating
battens provide privacy yet
allow for ventilation
Reference: The Site Improvement
Handbook for Multi-family Housing

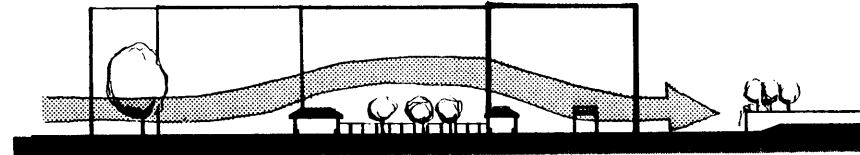


Furthermore, these enclosures restrict the central courtyard to private use. Lights, plants, and furnishings help define the courtyard as a protected zone for resident's use only. The private territories of the duplexes are similarly protected by their garden walls and gates.

Although the courtyard is not physically accessible to the public, it is visually. The glass enclosure of the breezeway makes views into and out of the courtyard possible and augments visual interaction and surveillance in this area. All of the use zones along the gallery and plaza are visually accessible to each other. Since most people are interested in other people, arranging these activities so that they are intervisible supports this characteristic of human nature.⁵

THE FACADE

Improvements to the facade are affected by simple additions to the



Wind Conditions at Courtyard.
Breezeways block the strong
winter winds from the courtyard.
Breaks-up the windy alley at the
ground level.

surface. The elevation is now comprised of three zones: a base, middle, and top. The addition of stringcourses just above the second floor marks the end of the duplexes and the beginning of the one and two bedroom flats. A stringcourse just under the seventh floor sets off the top as another distinct zone. Coherence between the hi -rises and the new townhouses is achieved by using the same vertically aligned roof material at the seventh floor that is used for the townhouses. Now, windows punched through roofs are common themes for both the hi -rises and the townhouses.

Other additions are the greenhouse windows for the larger window openings. This type of window gives residents a chance to personalize their windows and make separate units much more recognizable.

New facade elements are kept simple. Masonry for the stringcourses, new roofing material, and

garden fences for the duplexes introduce new textures, colors and add relief to the otherwise flat facade. Small roofs over the entrances to the duplexes and the underpass through the hi -rises also help to relieve the former monotony and again provides human scale elements at the ground level. The old brick remains and will require nothing more than cleaning to get it back to a pleasant coloring and to remove the writing on the walls.

Notes

1. Clare Cooper's Chapter 10, "User Needs in Multifamily Housing: Some Recommendations" in Easter Hill Village, pp.207-280 is the primary reference for the user needs described in this chapter.
2. Randolph T. Hester, Neighborhood Space (Stroudsburg, 1975), p.1.
3. John Hancock Callender, Time Saver Standards (Taiwan, 1982), pp.2-202.
4. Clare Cooper, Easter Hill Village (New York, 1975) p.162.
5. Oscar Newman, Defensible Space (New York, 1973), p.66.
6. Kevin Lynch, Site Planning (Cambridge, 1971), p.200.

CHAPTER 7

CONCLUSION



SUMMARY OF FINDINGS

Architects can literally reconstruct the image of public housing. Familiarity with the relationship between the user and the dwelling expands the designer's ability beyond merely fulfilling a contractual obligation to creating spaces that reinforce the user's sense of self.¹ The provision of desirable homes and positive images for public developments are sure to follow.

This thesis has shown that through the definition of the user/dwelling relationship, the basic tenants of user needs are exposed. Three generalizations characterize this relationship; they point to the capacity of the dwelling to infer infer status and rank, to indicate protected zones, and to serve as a vehicle for human expression.

Images represent the chasm between society's input and tenant input into public housing. Society's image controls what it provides for public housing, and in turn, the tenant's image controls their response to the development. Negative images have prevailed for both the public and the tenants in the past. This thesis has demonstrated the expediency of an architectural approach in remedying these negative images. Following a review of tenant comments, the process of improving the image broke down into three steps.

First, the desired image is identified. It was shown that with the exception of luxury items, public developments have similar design goals as private developments. Furthermore, since low-income tenants often aspire to the image they have of private homes, public homes should have the same basic qualities. Second, the specific architectural elements that

control the image are pinpointed. The comments that tenants had about the appearance and organization of their houses made it possible to describe several characteristics of the house that people noticed most. Third, these elements are then manipulated to achieve the desired image. Form, function, and cost were the chief concerns of the architect. Residents were concerned with stigma, defensibility, and a decent environment for children. It was established that traditional organizations and appearances were the most effective ways to balance the concerns of both designers and residents.

This thesis demonstrates a process whereby a wholesome and attractive living environment at moderate construction costs is achieved through simple techniques such as adhering to traditional forms, restricting materials, and creating diversity by varying the organization

of elements. It demonstrates that the result provides distinctive qualities without soliciting the usual stigma or separateness from the rest of society.

SOCIAL PROBLEMS

Owing to very deeply rooted social problems, an architectural approach to improving public housing is limited. General hopelessness, unemployment, and poverty add to anti-social behavior and are beyond the designer's control.² Education--formal or informal--is not afforded by all segments of society.³ So, given even the most desirable environment, it is not realistic to assume that all members will show the expected behavior; some will not reap the benefits of the designer's efforts. The provision of a creative and well-defined neighborhood might offer the most benefits to children. There is evidence that the physical form of the

environment makes them cognizant of the existence of zones of influence and therefore the rights of others.⁴

Presently a void exists where autonomous control over the provision of housing should exist. Autonomy in the decision making processes is not built into the system. Cosmetic modifications to the units may just not reach deep enough. When dwellers control the major decisions and are free to make their own contribution to the design, individual and social well-being are stimulated.⁵ Control is also limited by the lack of choice in location. Tenants must rely on public decisions concerning the location of housing. Control is also limited by the lack of ownership opportunities. Symbolic ownership is valued in crowded urban areas.⁶ Tenant organizations have formed to address the problems around the lack of ownership, but the lack of money dampens their efforts. Some like the

South End Tenant Council (SETC) have organized to take over the management or ownership of slum dwellings to affect necessary repairs and maintenance.⁷

The problems of public housing are further compounded by discrimination. Not just in jobs and education, but in government agencies where policies are insensitive to the plight of low-income people, and employees regard the poor with little respect and dignity. Blacks in Boston have have fewer housing alternatives and get less for their dollar than their white counterparts.⁸

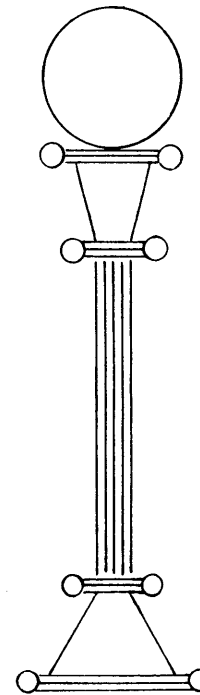
Equity in the distribution of benefits, autonomy of the household in the market, and the dispersion rather than the concentration of poor throughout urban areas are initial improvements to make.⁹ Likewise, a new social attitude in addition to a more thoughtful architectural approach will have to be adopted to bring public

housing to a higher level of acceptance. But only until the social and the built aspects are improved simultaneously will the potential of public housing be realized.

Notes

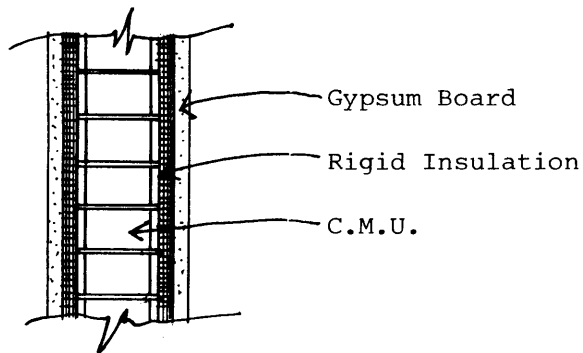
1. Clare Cooper, The House as a Symbol of Self (Berkeley, 1971), pp. 3-7.
2. Randolph Hester, Neighborhood Space (Stroudsburg, 1975), p. 1.
3. The President's Commission on Law Enforcement and Administration of Justice, The Challenge of Crime in a Free Society (New York, 1968), p. 69.
4. Oscar Newman, Defensible Space (New York, 1973), p. 14.
5. John Turner, Housing by People (New York, 1974), Foreword by Editor.
6. Hester, p. 57.
7. The Housing and Community Research Groups, The Empty Promise (Boston, 1973), p. 5.
8. Kent Colton and Rolf Goetze, MIT/BRA Urban Dynamics Committee, Toward a Housing Policy and Program for the City of Boston (Boston, 1974), p. 41.
9. Colton and Goetze, p. 41.

APPENDIX



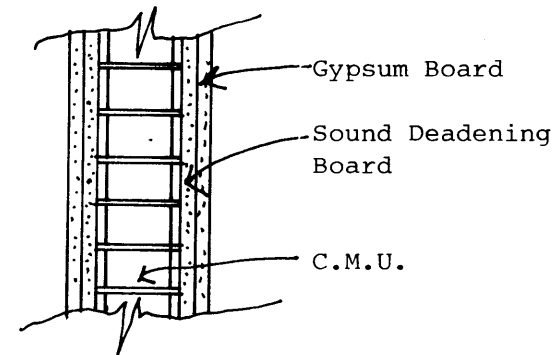
8" MASONRY BLOCK INSULATED AND
WITH GYPSUM BOARD

C.M.U.	\$2.65
Horizontal Rein.	0.27
Mortar	0.18
Tool & Clean	0.18
1" Rigid Insul.	0.50
Metal Furring	0.73
5/8" Gypsum Board	0.47
Taping & Spackling	0.53
	<u>\$5.51/sf</u>



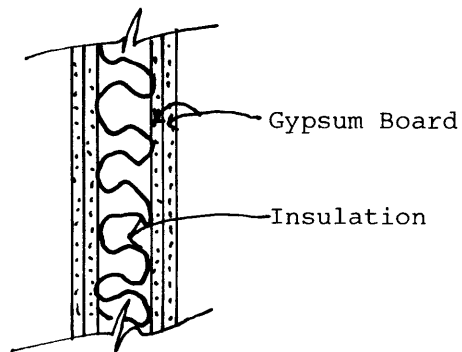
8" MASONRY , GYPSUM BOARD & SOUND
DEADENING BOARD

C.M.U.	\$2.65
Horizontal Rein.	0.27
Mortar	0.18
Tool & Clean	0.18
Metal Furring	0.73
1/2" Gypsum Board	0.47
1/2" Sound Deadening Bd.	0.45
Taping & Spackling	0.53
	<u>\$5.46</u>
Four-hour fire rating	



DOUBLE DRY WALL

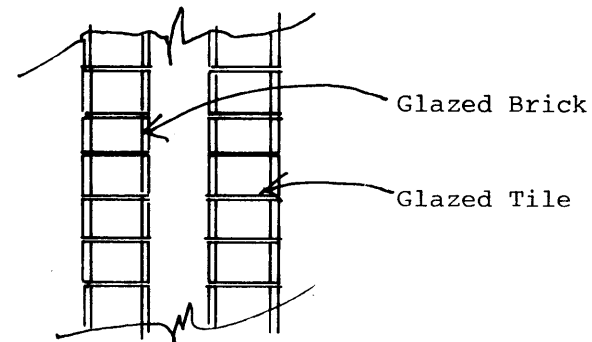
$\frac{1}{2}$ " Gypsum Board(4Sides)	\$0.98
2x4 Studs(4Sides)	1.88
$3\frac{1}{2}$ " Batt Insulation	0.78
Taping & Spackling	0.53
One-hour fire rating	<u>\$4.17</u>



10" GLAZED BRICK CAVITY WALL

4" Glazed Brick
4" Structural Glazed Tile
Mortar
Metal Wall Tiles
Tool & Clean

\$12.49



WORKS CITED

Callender, John Hancock, ed. Time Saver Standards For Architectural Design Data, New York: McGraw-Hill, Inc., 1954; reprinted ed., Taiwan: Rainbow Bridge Book Co., 1982.

Colton, Kent and Rolf Goetze. (Toward A Housing Policy and Program for the City of Boston), for the Boston Redevelopment Authority/Massachusetts Institute of Technology Urban Dynamics Advisory Committee, Boston, January, 1984.

Cooper, Clare. Easter Hill Village, New York: The Free Press, 1975.

_____. The House As A Symbol of Self, Berkely: Institute of Urban and Regional Development, 1971.

Hester, Randolph T., Jr. Neighborhood Space, Stroudsborg: Dowden, Hutchinson, and Ross, Inc., 1975.

Housing and Community Research Groups, The Empty Promise, Cambridge: Urban Planning Aid, Inc., 1973.

Johnson, Timothy E. Solar Architecture, The Direct Gain Approach, New York: McGraw-Hill Book Company, 1981.

Liston, Robert. The Ugly Places, New York: Franklin Watts, Inc. 1974.

Lynch, Kevin. The Image of the City, Cambridge: The M.I.T. Press, 1977.

_____. Site Planning, Cambridge: The M.I.T. Press, 1971.

Mission Hill, Boston 200 Neighborhood History Series. Boston: Boston 200 Corporation, 1976.

Mission Hill/Medical Center Area, District Profile and Proposed 1978-1980. Boston: Neighborhood Improvement Program, Boston Redevelopment Neighborhood Planning Program.

Newman, Oscar. Defensible Space, New York: Collier Books, 1973.

Rudofsky, Bernard. Architecture Without Architects, New York: Doubleday & Company, Inc., 1964.

Stainton, John, et al. Cathedral Comprehensive Redevelopment Plan, Phase One: Information Analysis,

Boston: Boston Housing Authority, 1982.

Turner, John. Housing By People, New York: Pantheon Books, 1977.

Whittlesby, Robert B., The South End Row House: A Rehabilitation Story, Boston: South End Community Development, Inc., November 1968.

SOURCES CONSULTED

Alff Jon. Neighbor Based Dwelling
Places, M. Arch. Thesis ,
Massachusetts Institute of
Technology, Cambridge, June 1980.

BOCA Basic Building Code/1980 8th ed.
Homewood, IL: Building Officials
& Code Administrators
International, Inc. 1981.

Bromely Park/ Mission Hill Extension
Turnkey Developer's Kit: Boston
Boston Housing Authority, October
1983.
The program and site plan was
taken from this developer's kit.
This document was also a guide
to handicap design requirements

Bryan, Harvey J. et. al. Daylighting:
A Resourcebook, Troy: Center
for Architectural Research,
July, 1981.

Callecod, Robert. Site Improvment
Handbook for Multi-Family Housing,
Urbana- Champaign: Housing
Research and Development Program
of the University of Illinois, 1974.

Cathedral Developer's Kit. Boston: Boston
Housing Authority, May 1983.

Duncan, Karen M. Passive Solar in the
City: An Energy Conscious Design
for a Subsidized Multi-Family Housing
Development, M. Arch. Thesis,
Massachusetts Institute of
Technology, Cambridge, June, 1981.

Newman, Robert B. et al. "Acoustics" in
Timesaver Standards, ed. John
Hancock Callender. New York :
Mc Graw Hill, Inc, 1974, 5th ed.

Peattie, Lisa Redfield. "Public Housing:
Urban Slums under Public Management"
in Race, Change, and Society,
Pp. 287-310. ed. Peter Orleans
and William Russell Ellis, Jr.
Beverly Hills: Sage Publications,
1971. Reprinted from Urban Affairs
Annual Reviews, 5(1971).

Stainton, John et al. Cathedral
Comprehensive Redevelopment Plan,
Phase One: Information Analysis,
Boston: Boston Housing Authority,
1981.

. Cathedral Comprehensive Redevelop-
ment Plan, Phase Two: Design and
Program, Boston: Boston Housing
Authority, 1982.

U.S. Department of Housing and Urban
Development. Minimum Property
Standards for Multi-Family Housing,
5th ed., 1973.